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HEARING OF SCHOOL CHILDREN AS MEASURED BY THE AUDIOMETER AND AS RELATED TO SCHOOL WORK

A STUDY OF 710 CHILDREN IN WASHINGTON, D. C., AND 1,150 IN HAGERSTOWN, MD.

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Introduction

In cooperation with the District of Columbia Board of Education, a study of hearing acuity was begun in August, 1927, in one of the summer schools of Washington. The investigation was continued during the regular session of the schools to the end of the year, and in January, 1928, was begun in the schools of Hagerstown, Md., through the cooperation of the school authorities of that city.

In the Washington summer school as many children were tested as possible, and in the regular school session the entire class was tested. In Hagerstown all the pupils were tested in the class selected. Generally speaking, a cross section of the school population was studied. In the summer school, however, children are supposed to be preparing for advanced work or to be making up credits for conditional promotion. The selections in these groups are on a basis of school work and are made by the school authorities. In one of the eighth-grade classes there was a predominance of overage children.

The audiometer used was a new one, and in the Washington schools it was set up in each school in a room with brick partitions. The pupils were seated in positions which made copying or comparison of tests impossible. Only eight ear phones were used at a test; and as the time was limited, there was practically no opportunity for a child to obtain results other than those of his own test.

Of the 710 pupils tested in Washington, 158 were given two tests, making in all 868 tests in that city. Most of the children retested were selected because their original test showed a marked hearing loss; in a few instances noises outside the testing room (fire drill, passing fire engines, etc.) interfered. In a limited number of extremely good scores, retests were made to find out whether the same score could be obtained.

The school grades of the children tested ranged from the third to the ninth, inclusive, and the ages from 8 to 17 years. In the third and fourth grades the 2-number test records 3 and 4 were used; from the fifth to the ninth, inclusive, 3-number test records 1 and 2 were used. These records appear to be interchangeable.

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It is, of course, possible that the older children may have understood the nature of the test better than the younger ones and secured a better rating because of this superior understanding. However, since no child under 8 years of age was tested, this factor probably had little influence on the results.

I. Children with Various Grades of Hearing, by Age and Sex, in Washington and Hagerstown

All the tests of hearing in the Washington schools were made by Miss Elizabeth Bell, who carefully worked out the technique to be observed in handling the children and conducting the tests. At the beginning of the work in Hagerstown Miss Bell went to that city and demonstrated this technique to Miss Sallie Jeffries, who conducted the testing in the Hagerstown schools. It is seen, therefore, that though the tests were made by two different individuals the same methods were used in each case.

Though it is obviously inaccurate to say in general terms that one's hearing is as good as the hearing in the better ear, yet for purposes of study and comparison it would seem permissible to use the hearing in the better ear as the hearing status of the individual. Hence the general consideration of the hearing of the group will be based upon this interpretation.

In Table 1 are given the percentages of children with the various grades of hearing among the whole number examined. In Figures 1 and 2 are graphic representations of the facts brought out in the table.

There is apparently no doubt that among the older children there is more good hearing than among the younger. The rate for normal or above normal hearing among the children of 14 years and over is 27 per cent greater than the rate in the eight and nine year group.

TABLE 1.—*Percentage of children with various grades of hearing in the better ear among 1,860 school children in Washington, D. C., and Hagerstown, Md., by age and sex*

Grade of hearing	Age				
	All ages	8-9	10-11	12-13	14-17
Normal and above normal:					
Both sexes	67.7	58.7	65.5	71.2	74.6
Boys	67.7	62.5	67.1	69.8	69.3
Girls	67.8	55.4	64.0	72.4	80.9
Loss of 3 units:					
Both sexes	22.0	31.6	25.9	16.8	15.4
Boys	21.4	28.6	24.8	16.4	18.3
Girls	22.7	34.2	26.9	17.2	11.8
Loss of 6 units:					
Both sexes	8.7	8.6	7.3	10.4	7.7
Boys	9.0	7.7	6.1	11.8	9.7
Girls	8.3	9.3	8.4	9.1	5.3
Loss of 9 or more units:					
Both sexes	1.6	1.1	1.3	1.6	2.4
Boys	2.0	1.2	1.9	2.0	2.7
Girls	1.2	1.0	0.7	1.3	2.0
Number of children	1,860	361	537	624	338
Boys	921	168	262	305	186
Girls	939	193	275	319	152

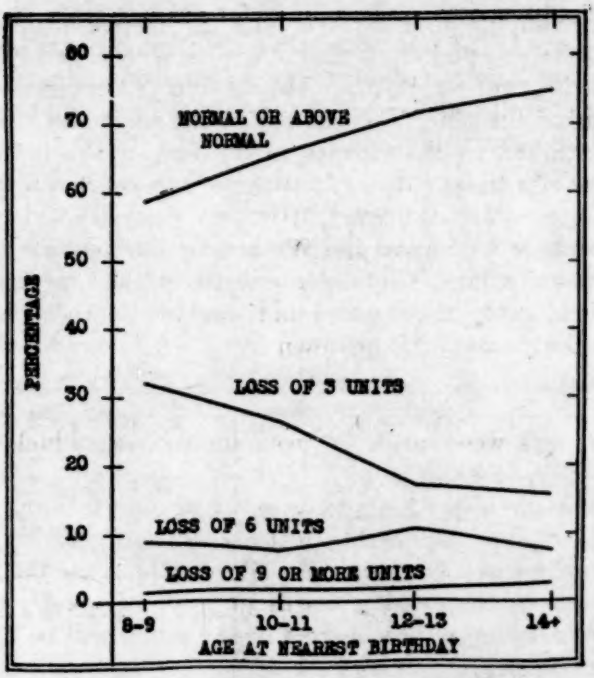


FIGURE 1.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) schools, by age. (Both sexes)

Not only is it true that there is much more good hearing among the older children, but loss of hearing (three units) which is so slight as to have little significance is much less among the older children.

The reverse, however, is true in the case of the hearing loss which is great enough to be unquestionably significant—nine or more units.

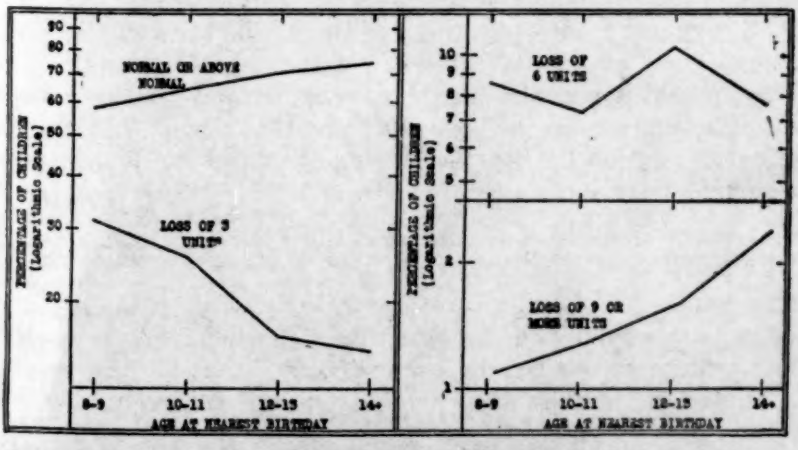


FIGURE 2.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) schools, by age. (Both sexes. Logarithmic scale)

While the percentage of children having this degree of defect is low throughout the age period studied, there is a consistent rise in the curve from the youngest to the oldest group. Among the actually hard of hearing the older children are in the majority. In the loss of six units the curve of incidence in the various age groups shows no consistent rise or fall.

When the sexes are compared, it is seen that although there is a higher percentage with good hearing among the younger boys than among the younger girls, after a period between the ages of 11 and 12, the excess is in favor of the girls and is greater than that in favor of the boys in the younger groups.

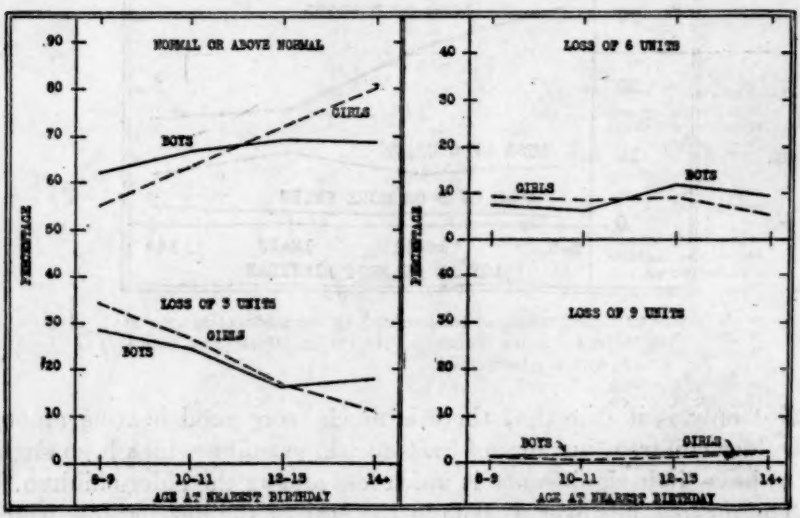


FIGURE 3.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) schools, by age and sex

In the highest grade of hearing loss there is no age group in which the proportion among the boys is less than that among the girls. It may be said in general that there is slightly more marked impairment of hearing among the boys of all ages than among the girls. In the matter of good hearing the larger proportions are found among the younger boys and among the older girls.

COMPARISON OF THE HEARING OF CHILDREN IN THE WASHINGTON AND THE HAGERSTOWN REGULAR SESSION SCHOOLS AND IN THE WASHINGTON SUMMER SCHOOL

The findings recorded above are those relating to the group of children as a whole. The following more detailed study shows how these findings compare with those of each of the three separate groups studied, and how these groups compare with each other.

TABLE 2.—*Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) schools, the Hagerstown (Md.) schools, and the summer school, by age and sex*

Grade of hearing and school group	All ages	Age			
		8-9	10-11	12-13	14-17
Normal or above normal hearing:					
Both sexes—					
Washington schools	70.6	52.3	70.0	73.2	79.3
Hagerstown schools	64.9	61.0	63.9	68.0	67.1
Summer school	82.5	-------	-------	82.6	85.2
Boys—					
Washington schools	66.0	50.1	67.5	68.2	68.2
Hagerstown schools	67.2	65.4	67.3	69.1	65.9
Summer school	80.3	-------	-------	80.0	82.7
Girls—					
Washington schools	75.1	53.6	73.4	77.7	90.5
Hagerstown schools	62.7	56.3	61.2	67.1	68.7
Summer school	85.7	-------	-------	87.5	88.0
Loss of 3 units:					
Both sexes—					
Washington schools	18.0	35.2	22.6	11.1	13.5
Hagerstown schools	25.3	30.6	27.0	21.5	20.3
Summer school	9.7	-------	-------	13.0	5.6
Boys—					
Washington schools	19.4	34.3	25.6	10.6	19.0
Hagerstown schools	23.7	27.2	24.1	20.9	22.3
Summer school	9.8	-------	-------	13.3	3.4
Girls—					
Washington schools	16.6	35.7	18.8	11.5	7.9
Hagerstown schools	26.8	34.1	29.4	21.9	17.2
Summer school	9.5	-------	-------	12.5	8.0
Loss of 6 units:					
Both sexes—					
Washington schools	9.7	11.4	6.7	12.3	7.1
Hagerstown schools	8.3	7.3	7.5	9.8	8.8
Summer school	5.8	-------	-------	4.4	5.5
Boys—					
Washington schools	12.9	15.6	5.8	17.7	12.7
Hagerstown schools	7.0	5.9	6.3	8.6	7.4
Summer school	8.2	-------	-------	6.7	10.4
Girls—					
Washington schools	6.7	8.9	7.8	7.7	1.6
Hagerstown schools	9.6	8.8	8.5	11.0	10.9
Summer school	2.4	-------	-------	-------	-------
Loss of 9 or more units:					
Both sexes—					
Washington schools	1.6	1.1	0.7	3.3	-------
Hagerstown schools	1.5	1.1	1.6	0.6	3.8
Summer school	1.9	-------	-------	-------	3.7
Boys—					
Washington schools	1.7	-------	1.2	3.5	-------
Hagerstown schools	2.1	1.5	2.3	1.2	4.3
Summer school	1.6	-------	-------	-------	3.4
Girls—					
Washington schools	1.6	1.8	-------	3.1	-------
Hagerstown schools	0.9	0.7	0.9	-------	3.1
Summer school	2.4	-------	-------	-------	4.0
NUMBER OF CHILDREN TESTED					
Washington schools:					
Both sexes	607	89	150	243	126
Boys	294	32	86	113	63
Girls	313	56	64	130	63
Hagerstown schools:					
Both sexes	1,150	272	385	335	158
Boys	566	136	174	162	94
Girls	584	136	211	173	64
Summer school:					
Both sexes	103	1	2	46	54
Boys	61	-------	2	30	29
Girls	42	1	-------	16	25

In Table 2 are shown the percentages of children with various grades of hearing in the three groups—the Washington and Hagerstown regular session schools and the Washington summer school. In any comparison of conditions in these groups it must be borne in mind that the number in the summer group is small—only 100 children. Since all but three of these children were 12 years of age or older, the two younger groups are omitted in the graphs. The Hagerstown group contains the largest number, 1,150; there were 607 in the larger Washington group. The curves in Figures 4 and 5 express graphically the comparisons among the schools.

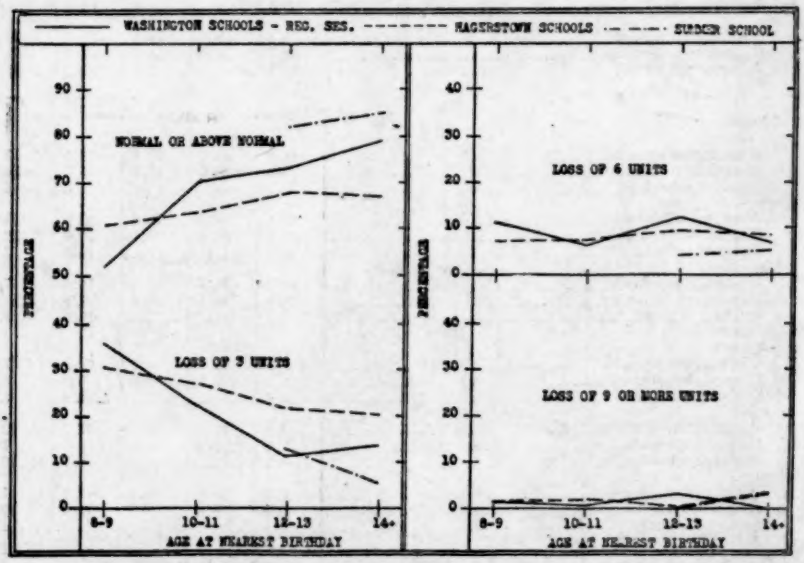


FIGURE 4.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) schools and in the Washington (D. C.) summer schools, by age. (Both sexes)

The curves of the individual groups have, in general, much the same character as the curves of the combined group. The variations with age are generally similar, though the Hagerstown curves are smoother because of the larger number of children tested.

With the exception of the youngest children, there is a larger percentage with normal or above normal hearing in the Washington group than in the Hagerstown group. Among the older children, the summer school has the highest percentage of normal or above normal hearing.

In the matter of significant hearing loss, there is little difference among the three groups when all ages are considered. In no group at any age, when both sexes are taken together, does the percentage of those having significant hearing loss rise as high as 4. In the Washington regular session schools the peak is reached at the 12–13

age period, with a percentage of 3.3. In the Hagerstown schools and the Washington summer school it is in the oldest age period that the highest percentages are seen, 3.8 in the former and 3.7 in the latter.

Comparison of the sexes in each group.—The data in Table 2 (expressed graphically in fig. 5) shows that a higher proportion of the girls in the Washington schools in both the regular and the summer sessions have normal and above normal hearing than in the case of the boys. In the Hagerstown schools the boys have the advantage,

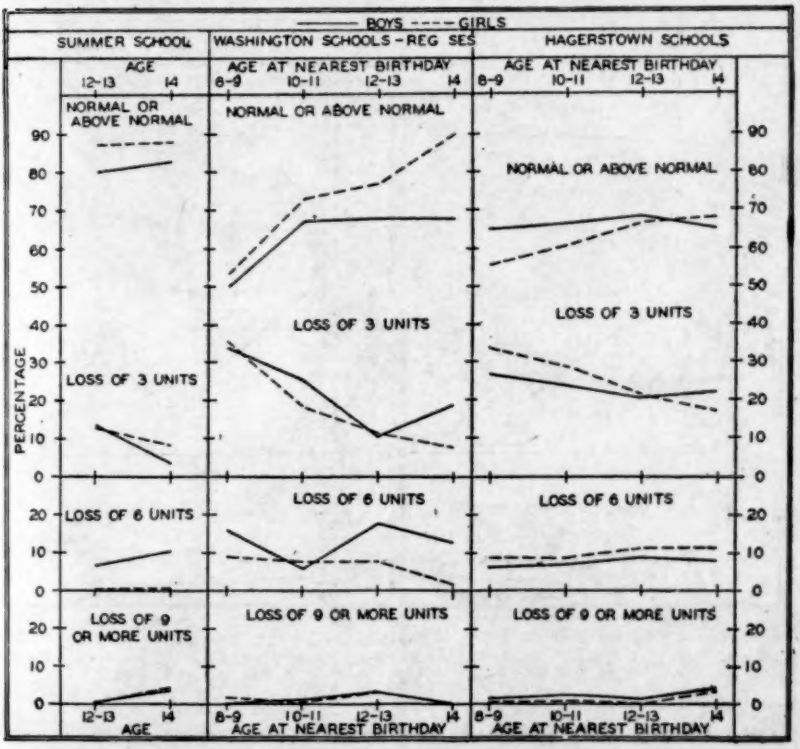


FIGURE 5.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) regular session schools and in the Washington (D. C.) summer school, by age and sex

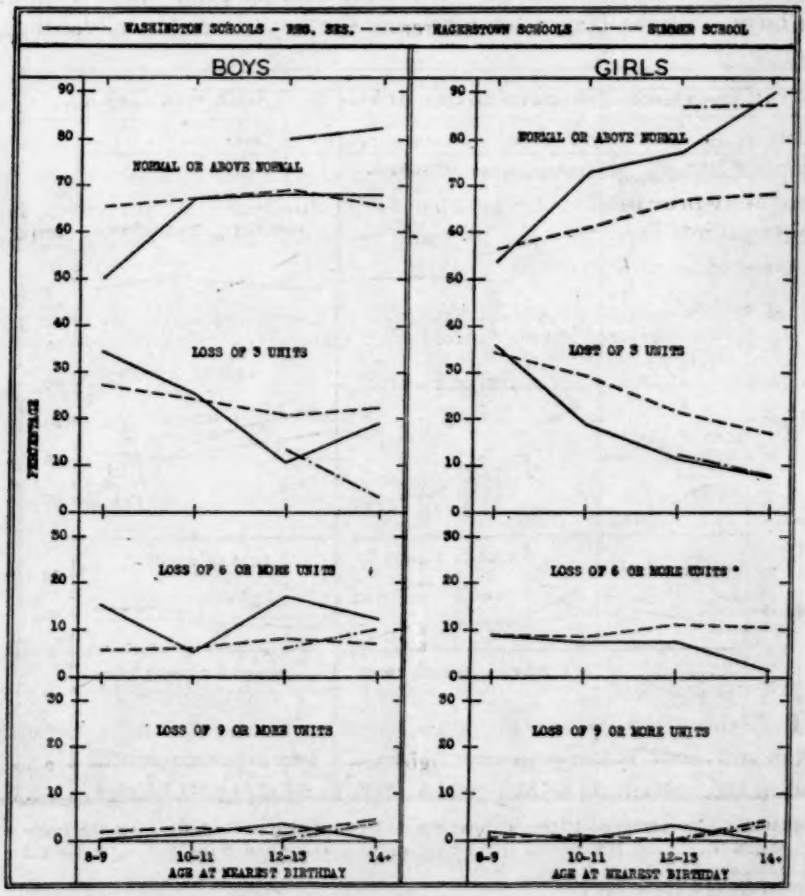
except in the oldest age group. In Hagerstown there are more girls with slight hearing loss, but with the most serious grade of hearing loss there are slightly more boys than girls.

In the Washington schools, both regular and summer sessions, in the matter of significantly poor hearing there is little difference between boys and girls. With both grades of slighter loss of hearing there are, in general, more boys affected than girls in the regular session schools.

In the summer school, more girls have a loss of three units, while more boys have a loss of six units. In any statement relating to the

summer school, however, the small number involved must be considered.

A comparison of the boys and girls in the three school groups is shown graphically in Figure 6. It is seen that, with the exception of the youngest children, in which group the Hagerstown children excel the Washington children, there is little difference in the amount of



*None found in summer school in groups considered.

FIGURE 6.—Percentage of children with various grades of hearing in the better ear in the Washington (D. C.) and Hagerstown (Md.) regular session schools and in the Washington (D. C.) summer school, by age and sex

good hearing among the boys in the Washington schools (regular session) and in those in the Hagerstown schools. The boys in the summer school, however, have a decidedly higher percentage of good hearing than in either of the other two groups. In the matter of poor hearing (loss of nine or more units) the boys of neither group consistently exceed those of the other two groups.

A comparison of the girls in the three groups shows that a decidedly higher percentage of the Washington girls have normal or above normal hearing than the Hagerstown girls. The oldest girls in the regular session Washington schools excel even the girls of the same age in the summer school, though the summer school younger children are superior to those of Hagerstown or the Washington regular session schools. Among the girls with poor hearing (nine or more units) there is no consistent difference in the percentages in the three groups.

II. The Prevalence of Various Grades of Hearing in the Right and Left Ears

Since in every instance the ears were tested separately, it is a simple matter to determine in which ear the various grades of hearing were more prevalent in this group of 1,860 children. In comparing the right and left ears, only the best and poorest grades of hearing will be considered.

TABLE 3.—*Percentage of children with good and poor hearing in the right and left ears among 1,860 school children in Washington, D. C., and Hagerstown, Md.—All ages*

Grade of hearing	All schools		Washington schools		Hagerstown schools		Summer school	
	Right ear	Left ear	Right ear	Left ear	Right ear	Left ear	Right ear	Left ear
Normal or above:								
Both sexes	50.0	54.6	51.7	56.0	46.9	52.0	74.7	75.8
Boys	51.4	54.3	48.0	49.6	51.1	54.6	70.5	73.8
Girls	48.7	55.0	55.3	62.0	42.8	49.5	81.0	78.5
Loss of 9 or more units:								
Both sexes	7.0	5.5	7.1	6.3	7.2	5.2	4.9	3.9
Boys	7.6	6.5	7.5	8.2	8.0	6.0	4.9	3.3
Girls	6.5	4.5	6.7	4.5	6.5	4.5	4.8	4.8

In Table 3 are given the percentages of children of all ages with good and poor hearing in the right and left ears in all the schools and in the individual school groups. It is seen that in every instance except in the case of girls in the summer school a higher percentage of left ears have good hearing than of right ears. This is true of the group as a whole and of each separate school group. The difference is most marked in the case of girls in the Washington and Hagerstown schools. In the matter of the highest grade poor hearing, however, a slightly higher proportion of the right ears are found to have this defect. The reverse is true in the case of boys in the Washington schools, and the percentage among girls in the summer school is equal in the two ears.

It seems evident, when all ages are considered, that the left ear is superior to the right among these children. In order to learn whether this is true of boys and girls of the various ages, a further analysis of the data is necessary.

TABLE 4.—*Comparison of right and left ears by age and sex. Percentage of children with good and poor hearing among 1,860 school children in Washington, D. C., and Hagerstown, Md.*

	Good hearing (normal or above normal)				Poor hearing (loss of 9 or more units)			
	Age at nearest birthday							
	8-9	10-11	12-13	14-17	8-9	10-11	12-13	14-17
Both sexes:								
Right ear	38.8	47.1	55.5	56.5	7.2	6.5	7.5	6.8
Left ear	45.5	50.1	58.0	65.4	3.9	3.9	8.2	4.7
Boys:								
Right ear	43.5	49.7	56.4	52.7	6.0	6.9	8.5	8.6
Left ear	49.4	53.5	54.8	59.2	4.2	5.3	8.5	7.0
Girls:								
Right ear	34.7	44.7	54.5	61.2	8.3	6.2	6.6	4.6
Left ear	42.0	46.9	61.1	73.0	3.6	2.5	7.8	2.0

In Table 4 and Figure 7 the data are arranged to show a comparison of the right and left ears by age and sex.

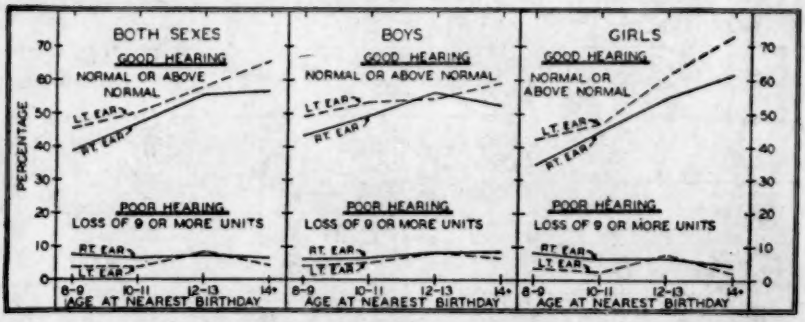


FIGURE 7.—Comparison of right and left ears by age and sex. Percentage of children with good and poor hearing among 1,860 school children in Washington, D. C., and Hagerstown, Md.

It is easy to see from the table and graphs that in the matter of good hearing the superiority of the left ear is maintained at all ages, with one exception. The curve of good hearing in the left ear falls a little below that in the right ear among boys in the 12–13-year age group.

The predominance of poor hearing in the right ear is general in this group at all ages except 12–13. A rather larger number of girls at that age have poor hearing in the left ear, while in boys of the same age there is no difference in the amount of poor hearing in the two ears.

It is not possible to say whether this indicated superiority of the left ear is real or only apparent. There would seem to be no reason why such difference should exist or why one ear should be better than the other. The result in this particular group may have been purely a matter of chance.

Comparison of the Right and Left Ears of Boys with the Corresponding Ear of Girls

Since we have seen that, generally speaking, in this group there is a greater amount of good hearing in the left ear, and more poor hearing in the right, it is of interest to note how the hearing in each ear in one sex compares with that in the other.

Considering the right ear of boys and girls, we see in Table 4 that good hearing in that ear is found more frequently among the boys except in the oldest age group. In the matter of poor hearing in the right ear, the greater amount is found among the boys except in the youngest age group. Apparently the degree of hearing most prevalent in the right ears of the girls lies between these extremes.

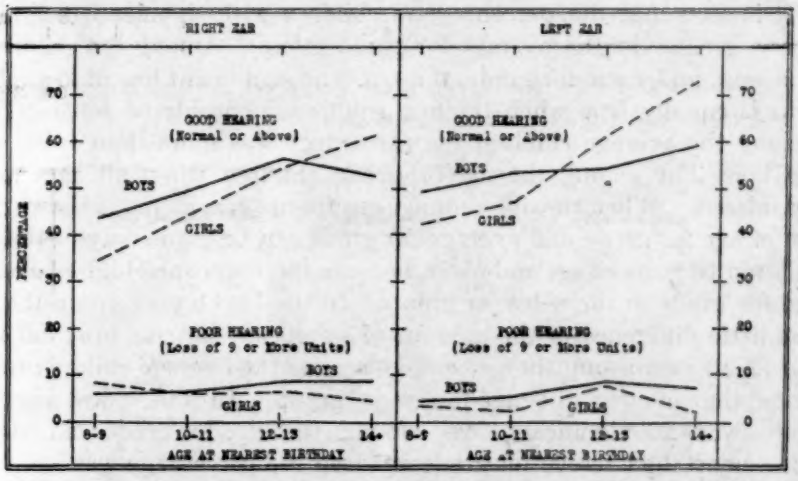


Figure 8.—Comparison of the right and left ears of boys with the corresponding ears of girls. Percentage of children with good and poor hearing in each ear among 1,860 children in Washington, D. C., and Hagerstown, Md., by age and sex

When the left ear is considered, good hearing is more equally divided between the sexes. Among the younger children the boys have the advantage, but the reverse is true in the older age groups. In the matter of poor hearing in the left ear, a greater amount is found among the boys at every age.

III. The Relation of Hearing to Age-Grade Status, Character of Work, and Intelligence Quotient

A study of the age-grade status of the total number of children (1,860), of the character of work of 1,313 children, and of the intelligence quotient of 585 children reveals an interesting correlation between the hearing status of the children and these three factors related to their mental status.

TABLE 5.—*Relation of hearing status to age-grade status of 1,860 children in the Washington, (D. C.) and Hagerstown, (Md.) schools*

Hearing	Percentage of children			Number of children		
	Under age for grade	At age for grade	Overage for grade	Under age for grade	At age for grade	Over age for grade
All children	100.0	100.0	100.0	129	1,285	446
Normal or above	72.9	68.4	64.4	94	879	287
Slight loss	27.1	30.4	32.7	35	390	146
Loss of 9 or more units	----------	1.2	2.9	----------	16	13

The age-grade status was known of every child in the whole group studied. Table 5 shows the relation of this factor to the hearing status of the children.

It is seen that the percentage of children with significant hearing loss is greater in the overage-for-grade group. Among the children who were under age-for-grade, there was no significant loss of hearing. This is equally true when the age groups are considered separately. Among the overage children the percentage was more than twice as great as that among the age-for-grade children when all ages are considered. When the different age groups are considered, a comparison of age for grade and overage for grade can be made only of those children 10 years of age and older, because there were no children overage for grade in the 8–9 year group. In the 10–11 year group there was little difference in the amount of significant hearing loss, but in the 12–13 year group the percentage among the overage children was twice that among the age-for-grade group. In the oldest group there was no significant loss among the age-for-grade children, but among the overage-for-grade children the percentage was 3.8.

TABLE 6.—*The relation of the hearing status of 1,313 children in the Washington, (D. C.) and Hagerstown (Md.) schools to the character of their school work*

Hearing	Percentage of children			Number of children		
	Excellent work	Satisfactory work	Unsatisfactory work	Excellent work	Satisfactory work	Unsatisfactory work
All children	100.0	100.0	100.0	255	746	312
Normal or above	61.6	66.8	59.6	157	498	186
Slight loss	36.8	31.5	38.2	94	235	119
Loss of 9 or more units	1.6	1.7	2.2	4	13	7

Table 6 seems to indicate that significant loss of hearing increases as the character of the work grows poorer. In other words, when all ages are considered, among the children doing the poorest school work there is the largest amount of significant hearing loss. When the age groups are considered separately this is strikingly true of the youngest and oldest groups. In the two intermediate groups, 10–11 and 12–13, there is much irregularity.

The intelligence quotient was known only in the case of 585 children in the Washington schools. The hearing status of these children is shown in Table 7.

TABLE 7.—*The relation of the hearing status of 585 children in the Washington D. C., schools to their intelligence quotient*

Hearing	Percentage of children			Number of children		
	Intelligence quotient above average	Intelligence quotient average	Intelligence quotient below average	Intelligence quotient above average	Intelligence quotient average	Intelligence quotient below average
All children	100.0	100.0	100.0	167	311	107
Normal or above	74.2	71.7	60.8	124	223	65
Slight loss	25.2	26.7	35.5	42	83	38
Loss of 9 or more units	0.6	1.6	3.7	1	5	4

Here again it is seen that the greatest amount of defective hearing is found among the children with the lowest mental status.

In all these comparisons it must be borne in mind that the number of children with significant hearing loss is small, and conclusions drawn from such data are never really conclusive. However, the three sets of comparisons are in such agreement that one feels justified in assuming that children with such defective hearing are at least handicapped in their school work. No one would, of course, assume that defective hearing affects "native" intelligence, but a failure to hear clearly the oral presentation of a mental test might easily affect the intelligence quotient.

IV. The Relation of Hearing to a Discharging Ear

The records of discharging ears were obtained from the children themselves, and hence the accuracy of the reports can not be of the highest order. The error probably lies chiefly in the fact that a child might easily forget having had a running ear if it were not of recent occurrence. However, the possible seriousness of a discharging ear is great enough to make a study of this relationship desirable.

TABLE 8.—*The relation of the hearing status in the right and left ears to a discharge from the ears in 1,815 school children in Washington, D. C., and Hagerstown, Md.*

Hearing	Percentage of children with a history of a discharging ear				Number of children with a history of a discharging ear				Total number children examined
	Right ear only or both ears	Left ear only or both ears	Both ears	One or both ears [1]	Right ear only or both ears	Left ear only or both ears	Both ears	One or both ears [1]	
Right ear:									
Normal or above	4.07	4.29	1.98	8.02	37	39	18	73	910
Slight loss	5.80	4.38	1.55	9.92	45	34	12	77	776
Loss of 9 or more units	14.73	11.63	5.43	21.70	19	15	7	28	129
Left ear:									
Normal or above	4.42	3.22	1.51	7.54	44	32	15	75	995
Slight loss	6.36	5.81	2.21	11.48	46	42	16	83	723
Loss of 9 or more units	11.34	14.43	6.19	20.62	11	14	6	20	97

[1] Includes children with discharging ear, but with no statement as to which ear discharged.

In Table 8 the correlation of the various grades of hearing with a discharge from the ear is shown for both the right and left ears.

It is seen at a glance that the percentage of children with a discharge from one or both ears varies inversely with the grade of hearing. This is true of both the right and left ears. In the right ear the percentage rises from 8 per cent in a group with normal or above normal hearing in the right ear to 21.7 per cent in a group with a significant hearing loss (nine units or more) in that ear. A like trend is observed in the left ear, in which a percentage of 7.5 per cent in the group with excellent hearing in the left ear rises to 20.6 per cent in the group with the poorest hearing in that ear.

Summary

1. In the whole group studied, there appeared to be more normal or above normal hearing among the older children. It is impossible to say whether this is a real difference or whether the older children made better records because of a better understanding of the tests.

2. Among the actually hard of hearing (loss of nine or more units) the older children were in the majority.

3. In general there was slightly more significant impairment of hearing among the boys of all ages than among the girls.

4. In no group at any age, when both sexes were taken together, did the rate of children with significant hearing loss rise as high as 4 per cent.

5. In general, there was a higher proportion of left ears with good hearing than of right ears. This was true of the group as a whole and of each separate school group. With one exception (boys in the 12–13 year group) the superiority of the left ear was maintained at all ages. Likewise, the predominance of poor hearing in the right ear was general at all ages except 12–13. No explanation of this difference is offered, but the element of chance may have been a factor.

6. The percentage of children with significant hearing loss was generally greater in the overage-for-grade group.

7. Among the children doing the poorest school work in the youngest and oldest groups there was the largest amount of significant hearing loss. In the intermediate-age groups the findings were not clear cut.

8. The highest percentage of children with significant hearing loss was found in the group with the lowest intelligence quotient.

9. The percentage of children with a discharge from one or both ears varied inversely with the grade of hearing.

THE TYPE DISTRIBUTION OF MENINGOCOCCI IN THE UNITED STATES DURING 1928 AND 1929

By Sara E. Branham, *Bacteriologist*, Clara E. Taft, *Junior Bacteriologist*, and Sadie A. Carlin, *Laboratory Assistant, the Hygienic Laboratory, United States Public Health Service*

During 1928 and 1929 epidemic cerebrospinal meningitis was more prevalent in the United States than at any other time since the World War, and a number of serious outbreaks occurred in widely scattered sections. The fatality rate was very high—as much as 50 per cent in some places—and serum therapy was not as efficacious in many localities as earlier experience with it had promised. A study of meningococci isolated from meningitis patients during this time has seemed an important step in approaching an understanding of this disappointing situation. We began our studies by trying to determine whether or not there are differences between the meningococci involved in these current cases and those which were prevalent during the epidemics of 10 years ago.

With the cooperation of many persons, nearly 200 strains of meningococci have been collected. One hundred and fifty-five of these were isolated during the 18 months following June, 1928. One hundred and forty are from spinal fluid, 5 from blood, and 10 from the nasopharynx. These meningococci are being studied from many angles, but in this report only their antigenic relationships, based on the agglutination and the absorption of agglutinin tests will be discussed, because it is upon this basis that serum therapy in cerebrospinal meningitis depends at the present time.

Although meningococci are a homogeneous group morphologically and culturally, they show much variation antigenically. A number of classifications have been reported. Murray (1) presents a table in which he has worked out the interrelations to each other of six classifications, based on the agglutination test. To these we must add the German classification (2) into 7 types whose relation to these other groupings is entirely unknown. These do not take into account the classification into 5 tropin groups made by Evans (3) in 1920. To-day the Gordon-Murray classification (4) is finding wide use in England and America, while the A, B, C, D (5) classification is recognized in France. The English I and III correspond with the French A, and II and IV with the French B; but the French C and D do not correspond with any English type.

Gordon has reported his four groups to be as distinct from each other as the paratyphoid species A and B (6). At the other extreme it appears that Walker (7) believes there is no justification for splitting the meningococcus into subgroups, claims that immunization by any type of meningococcus results in a polyvalent serum, and con-

siders that such a subdivision into groups could be made with different strains of any bacteria. Between these two extremes there are many opinions.

Both on account of the interest felt in the type distribution and as a basis for further studies with them, our 155 new strains of meningococci have been typed, using Gordon's classification. Monovalent type sera were made by immunizing young rabbits with representative strains which have been used at the Hygienic Laboratory as standard type strains for several years.

At first simple agglutination tests were made, running all strains with each of the four type sera in dilutions as high as 1:1600, as well as with normal horse serum. Absorption of agglutinin tests were done wherever they seemed to be indicated. Although no rigid criterion was adopted, usually absorption tests were made with all sera which agglutinated a strain in a dilution representing more than one-fourth of its titer.

The Type IV strains were easily separated from the others in these simple agglutination tests. There was practically no cross agglutination with other types, and no evidence of the close relation to Type II referred to by many others. In this respect the Type IV strains that we have found in this country differ from a Type IV strain that has recently come from Doctor Gordon, through the kindness of Doctor Krumwiede, as being typical of those found in England.

Next to Type IV, the Type II strains were most easily recognized. There was often some agglutination of these by low dilutions of Type I and III sera; but in only one case was absorption of agglutinins necessary, although such a procedure was followed with other strains as a matter of interest. Whenever a strain was agglutinated equally well by I, II, and III, or by I and II, or by II and III sera, absorption showed it to be either a I or III, and never a II.

With Type I and Type III strains cross agglutination was the rule, and there were very few exceptions. Generally, absorption of agglutinins was necessary to separate these from each other. Some Type I strains were recognized in the simple agglutination tests, but no Type III strain was identified as such without absorption of agglutinins. Not only was absorption necessary in order to separate the Type III strains, but with 12 strains separation by absorption with our standard type sera was not possible, each removing all agglutinins from both the I and III sera. The standard type sera used were made from strains which, while specific, are broadly agglutinogenic for their types—that is, a serum produced with each will agglutinate the majority of strains belonging to that type. Apparently the relation between I and III is so close that broad strains of these types are indistinguishable by absorption tests with their homologous sera. It was necessary to seek for strains of narrower

specificity in order to separate them. When this was done, nearly all of these puzzling strains were shown to be of Type III. Although the Type II and the Type IV strains were identified with ease, as were also some of the I's, months of work were necessary to separate all of the I's and III's from each other satisfactorily. Even then their separation depended on the choice of narrow strains within the groups as standards, and a change to yet other strains might alter their classification. Experience with these strains casts doubt upon the validity of the separation of I and III into two groups. It seems rather that III is a subgroup of I, and it is considered as such by several classifications. Evans (3) found Types I and III to belong to the same tropin group. The time and labor involved in separating organisms as closely related as these I and III meningococci, while of much interest from a theoretical point of view, seems of questionable practical value.

Many strains seemed at first to be inagglutinable. These had to be considered individually. Some became readily agglutinable after several months of cultivation; with others an adjustment of the pH of the suspensions nearer to the isoelectric point solved the agglutination problem; sometimes it was necessary to plate them out in order to find agglutinable colonies. Sometimes all of these methods failed and it was necessary to resort to indirect typing by immunizing rabbits with these strains and studying the agglutination activities of the sera obtained thus. In these ways we have succeeded in typing nearly all of our meningococci.

The accompanying table shows the distribution of our 155 strains according to type, expressed in percentage. The first column shows the type distribution in the epidemic years of 1918–19 as determined by Butterfield and Neill (8). Columns 2 and 3 show the distribution of types in 2 nonepidemic years as determined by Evans (9). Column 4 shows the distribution among the types during the epidemic years of 1928–29 as determined by ourselves. These typings are interesting to compare, because they were done with practically the same technique, and the same four-standard type strains of meningococci were used to prepare the type sera.

Grouping of meningococci in the United States according to Gordon's types

Type	1918–19 (128 strains)	1921 (16 strains)	1922 (15 strains)	1928–29 (155 strains)
	Per cent	*Per cent*	*Per cent*	*Per cent*
I	37.5	18.7	6.7	52.9
II	25.8	18.7	----------	7.0
III	21.1	12.6	----------	18.7
IV	2.3	6.3	13.3	12.2
Not in the above types	13.3	43.7	80.0	9.2

Seventy-one per cent of our strains fall into Groups I and III, which correspond to the French Type A. This is definitely a higher percentage than in the epidemics of 10 years ago. It is of interest to note that there is such a low incidence at present of Type II, which has usually been next to I in frequency of occurrence. The increase in Type IV and the decrease in the number of strains which can not be placed in any type are worthy of note. The majority of sporadic strains found during the interepidemic years of 1921 and 1922 were atypical and did not fall into any of the recognized types.

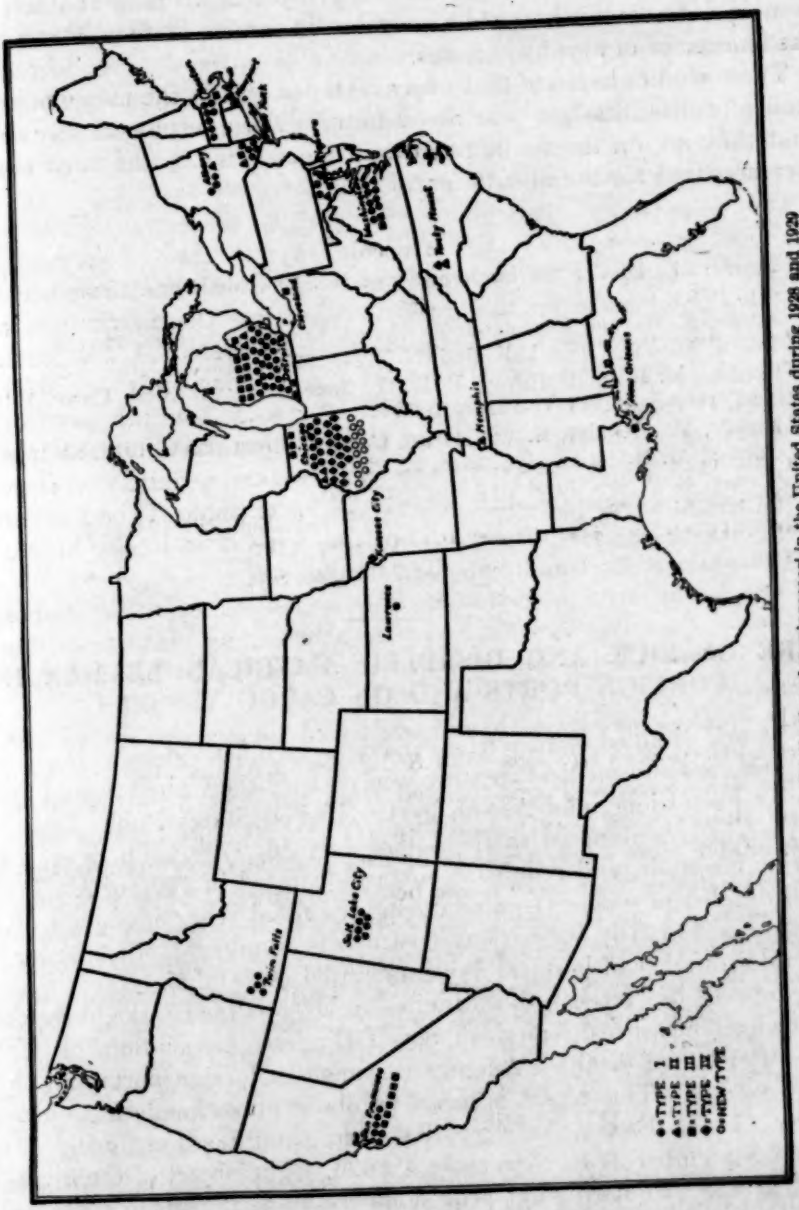
The geographical distribution of our 155 strains according to Gordon's types is shown on the accompanying map. This map is obviously incomplete, for there have been many outbreaks from which we have obtained no cultures; but it represents the distribution of those strains which we were fortunate enough to receive. The localization of Type IV in the Middle West is striking, only one strain of this type being received from outside of Chicago, and that one from Kansas City. In Chicago it seems to have been the dominant type. Another interesting point is that in small, severe, definitely localized outbreaks all strains are alike in type, as, for example, Type I in Salt Lake City and in Twin Falls, Idaho, and Type II in Rocky Mount, N. C.

Type I has been predominant throughout all of these studies. During the last 10 years Type II has changed from second place to fourth. Type III has taken second place. Type IV has definitely increased.

All of these 155 strains have been tested for agglutinability with therapeutic polyvalent sera from 8 different manufacturers. About 50 per cent were well agglutinated from the first by all of these. Many others were poorly agglutinated at first, but became more agglutinable after a few weeks or months of laboratory maintenance. The only strains that have never been agglutinated by any of these polyvalent sera are among the 9.2 per cent that we have not been able to type. Apparently they are not represented in Gordon's classification, nor in the polyvalent therapeutic sera, if the agglutination test be taken as a criterion, although they form a homogeneous group among themselves. A more detailed study of these strains is being reported in another paper (10).

SUMMARY

One hundred and fifty-five strains of meningococci, isolated during the last 18 months, have been typed according to the classification of Gordon. Of these, 90.8 per cent fall into Gordon's 4 groups, whereas 9.2 per cent do not seem to be represented in that classification. Comparison with the grouping during the epidemic years 1918–19 shows a present greater preponderance of Types I and III (which are



Map showing the type distribution of meningococci in the United States during 1928 and 1929

considered by many to belong to the same group), a definite decrease in Type II, a marked increase in Type IV, and a decrease in the number of strains that could not be typed. A striking contrast is seen in intervening nonepidemic years in which there was a great predominance of atypical strains.

These studies indicate that at least 90 per cent of the meningococci studied during this last year are quite typical agglutinogenically, and that they are on the whole fairly well represented in the polyvalent sera prepared for therapeutic use.

REFERENCES

(1) Murray, E. D. G.: Special Rep. Series No. 124, Med. Res. Council, 1929, p. 103.
(2) Jötten, K. W., and Kortmann, T.: Zeit. f. Immunitats, 1928, **59**, 129.
(3) Evans, Alice C.: Hyg. Lab. Bull. No. 124, 1920, p. 43.
(4) Gordon, M. H., and Murray, E. D. G.: Jour. Roy. Am. Med. Corps, 1915, **25**, 411.
(5) Nicolle, M., Debains, E., and Jouan, C.: Ann. l'Inst. Past., 1918, **32**, 150.
(6) Gordon, M. H.: Jour. Hyg. 1918, **17**, 290.
(7) Walker, E. W. A.: Jour. Hyg. 1918, **17**, 380.
(8) Butterfield, C. T., and Neill, M. H.: Hyg. Lab. Bull. No. 124, p. 9.
(9) Evans, Alice C.: Pub. Health Rep., 1922, **37**, 1247.
(10) Branham, S. E.: Pub. Health Rep., 1930, **45**, 845.

CARE OF SICK AND DISABLED AMERICAN SEAMEN IN FOREIGN PORTS AND ON CARGO VESSELS

Sick and disabled seamen from American merchant vessels are given hospital care and medical treatment in ports of the United States, the insular possessions, and Alaska by the United States Public Health Service, in accordance with the act of July 16, 1798. There are 25 marine hospitals, and relief stations are operated in 150 ports. The total number of seamen treated during the fiscal year ended June 30, 1929, was 135,276; out-patient treatments numbered 367,294; and the total number of hospital days amounted to 981,295.

A report [1] has recently been issued by Dr. Walter Clarke, director of medical measures, American Social Hygiene Association, on the care of sick and disabled American seamen in foreign ports and on cargo vessels. This report is based on observations made in Copenhagen, Genoa, Havre, Antwerp, Hamburg, and London during the period September 21 to November 9, 1929. The object of the investigation was "to learn what provisions are made in foreign ports for the care of American seamen suffering from diseases or disabilities

[1] Report of Observations on the Care of American Seamen in Foreign Ports and on Cargo Vessels, September 21 to November 9, 1929. Prepared by Dr. Walter Clarke, American Social Hygiene Association. (Mimeographed.)

requiring medical attention." Observations were also made on the care on shipboard of sick or disabled American seamen on cargo vessels.

With regard to the responsibility and practice in the care of sick or disabled American seamen in foreign ports the report states:

The growth of the American merchant marine and the placing of this industry upon a permanent basis make all questions bearing upon the health of seamen a matter of major national importance. It is hoped that these notes regarding the ports and vessels may give an indication as to the importance of further inquiry and the development of suitable programs.

The laws of the United States require that the steamship companies be held responsible for sickness and injuries received by seamen in so far as such sickness and injury have been received "in the service of the ship." Formerly, destitute seamen and deserters who required medical care were looked after by the American consulates abroad, but a recent ruling of the Comptroller General states that the steamship companies must be responsible for hospitalization and care incident to the repatriation of seamen regardless of the nature of their disability. This includes, for example, the venereal diseases, injuries received in brawls, alcoholic gastritis, etc., conditions which are not caused by anything connected with the service of the ship. This new ruling and general tightening up of the supervision of expenditures by American consuls for the relief of American seamen has resulted in considerable confusion in foreign ports. Formerly a deserting seaman who acquired syphilis or gonorrhea applied to the nearest consul for relief and repatriation, and the consul arranged for his relief transportation to the United States. Now the consul makes a strong effort to induce the steamship company, by which the seaman was formerly employed, to pay the expense of hospitalization and repatriation. The definition of a deserter has been more strictly interpreted so as to rule out stragglers, i. e., sailors who have been left behind because of drunkenness or who have for any other reason failed to rejoin their ships after shore leave.

The practice with regard to the discharge of seamen due to illness varies in different ports and leads to confusion and difficulties so that neither the seamen nor the agents nor the consuls are altogether satisfied. At the present time the steamship companies, not unnaturally, try to unload the sick and disabled American seamen, if suffering from causes not associated with the service of their ship, or if a deserter, or straggler, on to the United States consuls. The consuls, on their side, try to force the steamship companies to pay for such seamen, and the seamen endeavor to escape costs of hospital care, being willing that either the steamship companies or the consuls should undertake that responsibility. All concerned would welcome clarification of regulations and uniformity of procedure.

With regard to port surgeons, port hospitals, and first-aid treatment on cargo ships, the report states:

In each port visited (Copenhagen, Naples, Antwerp, Hamburg, Havre, London) a doctor has been employed by American shipping interests to look after American seamen. He is usually a general practitioner of good standing. There are two types of contracts between these port surgeons and the companies. One type of contract provides that the port surgeon shall visit every American ship entering the port and care for seamen who require medical attention, the remuneration being so much per ship. The other type provides that the doctor may be called to the ship or that the doctor may give attention at his own consulting room, and a schedule of fees for visits to the ship or to the consulting room, by day or by

night, is agreed upon. Some of the port surgeons undertake the treatment of venereal diseases on shipboard, some treat these conditions at their own offices, and others refer them to the public clinic. In some cases the port surgeons doubtless encourage the seamen to become their private patients, although better treatment could be had free of cost at the public clinic. There is some reason to believe that port surgeons would serve the interests of the seamen more perfectly if, where possible, they referred all cases of syphilis and gonorrhea to the public clinics.

In some instances the port surgeons have been placed in an awkward position through the ignorance of agents and shipmasters. An instance of this may be cited: A certain port surgeon was called upon to visit a ship and examine a seaman suffering from severe pain in the abdomen and was asked to say whether the seaman should be allowed to depart with the ship. The port surgeon said the man should be sent to the hospital for observation. Two days later the surgeon of the hospital informed the port surgeon that he believed the seaman to be suffering from appendicitis and proposed to operate upon him the next day. The port surgeon concurred in this opinion, but the seaman refused operation, left the hospital, and applied to the master of the ship to take him back on board. The master of the ship, it is stated, agreed to do this if the seaman would bring him a statement from another doctor to the effect that the seaman was able to perform his duties. The seaman succeeded in obtaining such a certificate and the master permitted the seaman to rejoin the ship.

In this case the master would appear to have taken a very great risk in signing on the seaman in spite of the opinion of two doctors (one of which was the port surgeon employed by the steamship company) to the effect that the man should not sail and should be operated on for appendicitis. The doctor whom the seaman last consulted did not confer with the port surgeon and it is not known whether the seaman informed him fully of the facts of the case; probably he did not. Evidently local agents and masters would be well advised to accept the opinion of their port surgeons, who are employed for the purpose of giving such advice and who accept responsibility for it.

Wherever it is possible, hospitalization in foreign ports should be arranged by the port surgeon, who is competent to judge whether hospitalization is necessary and who knows the port's hospitals. An instance of this occurred recently in a certain port. An ambulance was called to meet the ship and to take a seaman to the hospital, but the ambulance attendants refused to move the sailor from the ship until they had a guarantee that the costs of hospitalization would be met. After much trouble, hard feelings, and delay, the cost of hospitalization was guaranteed temporarily by the pilot who happened to be on board ready to take the ship out of port.

The facilities on board a cargo ship for the treatment of emergency cases are often in the hands of the chief steward, although the first officer is usually held responsible by the captain. Deck and engine-room officers must have a first-aid certificate and they are supposed to be able to render simple first aid.[2] It would, therefore, seem a mistake to have the facilities and the actual care in the hands of the first steward, who usually knows very little about first aid. American ships usually carry a captain's medical guide and the new guide [3] recently issued by the United States Public Health Service is excellent in most particulars. Some ships, however, do not have this guide, but old fashioned books which are

[2] Editorial note: In accordance with the requirements of the Steamboat Inspection Service, applicants for license as master, mate, pilot, and engineer must, before receiving papers, be instructed in first-aid procedures and receive a certificate of proficiency from an officer of the United States Public Health Service.

[3] The Ship's Medicine Chest and First Aid at Sea.—*Ed.*

almost useless. It seems, also, that officers consult the medical guide only when they are in trouble and they sometimes find that they do not know how to carry out the procedures suggested by it. Sometimes the facilities for first aid treatment or simple medical care are not available, sometimes they are of the wrong type. Thus, on the ships studied, an archaic type of urethral syringe was provided, and on one ship the contents of the medicine chest were scattered between the salon and the quarters of various officers. Some of the medicaments were old and useless and others, though listed, were not on hand. There was nothing with which the modern and scientific treatment of burns and scalds could be carried out, no picric or tannic acid.

It may reasonably be doubted whether stewards, though ever so good at their special duties, should be charged with responsibility for the medicine chest or with the administration of first aid to seamen. One such officer remarked: "On a cargo ship the chief steward must be a cook, baker, meat cutter, salesman for the slop chest, bookkeeper, and a good fighter, since the fo'castle is often hard to please. To ask him to serve also as the ship's 'doctor' in spite of the fact that he does not have a first-aid certificate and does not enjoy much authority would seem too much."

It has been suggested by ship officers themselves that the first-aid training should be somewhat elaborated in the case of the master of the ship and that before an officer with a captain's license is assigned as master he should renew his acquaintance with first aid and should have some additional instruction in regard to emergencies which may occur on a ship without a doctor. An example of this may be cited. A seaman suffered from an acute retention of urine. It was many hours before medical advice could be attained by wireless. When that advice came, it suggested, of course, an effort to pass a rubber catheter. No one on the ship knew how to pass a catheter and the seaman was moribund before he could be taken off to another ship which had a surgeon. It may be suggested that every ship should be provided with a well equipped and thoroughly modern medicine chest, which should be properly organized in one place and inspected and checked up on each trip. It should be in charge of the first officer who should be the dispenser.

Of the two types of contract, that which requires the port surgeon to visit every ship is doubtless preferable. The port surgeon comes to the ship on its arrival and is available for consultation by any member of the crew who wishes to see him. Minor conditions and conditions about which a seaman hesitates to approach the captain may in this way be brought to the attention of the doctor, and the interests of the seamen and of the ship are protected. In the other type of contract the seaman must apply to the captain for medical attention; and as the port surgeon is paid at so much per visit to a ship, the captain would naturally use his judgment in deciding whether to call the port surgeon. Where the surgeon is under contract to visit the ship on each call to the port such conditions do not arise.

It was surprising to learn that in some ports the port surgeon had never visited the hospital to which he sends seamen as patients. In several of the ports visited I found that the practice of the port surgeon was to send a seaman to the appropriate hospital and to have nothing further to do with him. The first visits of these surgeons to the hospitals in question were made in my company, and I was interested to observe that in these instances the establishment of contact between the port surgeons and the port hospitals utilized by American seamen resulted in a better understanding between the port surgeon and the hospitals. This was especially evident in one case where the port surgeon had had difficulty in getting reports for the Protective and Indemnity Bureau regarding the seamen treated by the hospital. There would be considerable advantage to the seamen,

to the steamship companies, and the Protective and Indemnity Bureau in framing the contracts with port surgeons so as to include some attention by the port surgeon to the seamen after the latter have been placed in hospitals.

I visited the hospitals in each port with the exception of Copenhagen, where time did not permit; and, as I was already acquainted with a good many Scandinavian hospitals, this was perhaps not a serious omission. In Copenhagen, Antwerp, and Havre, seamen are usually sent to the general hospitals of the municipalities. In Hamburg, London, and Genoa, American seamen are usually sent to hospitals which are intended especially for seamen. Sometimes, these hospitals being overcrowded, seamen are sent to other general hospitals.

The hospital at Genoa is an ancient institution called the Protestant Hospital. It is a simple but clean institution and has the great advantage for American seamen that many of the nurses speak English. In Hamburg, American seamen are often sent to the Ship and Tropical Disease Hospital, where they receive excellent care, but where they are often unable to communicate with anyone on account of the language. In London, American seamen are well cared for and are comparatively happy in the Dreadnaught Hospital at Greenwich.

American seamen in European hospitals, however, are often not contented, because of misunderstandings which arise out of language difficulties, because of the diet which is provided for patients, and sometimes because of the difference in sanitary standards. The hospitals visited are, however, good according to the standards of the country in which they are located; and if the seaman becomes "fed up" with boiled cabbage and tea, or disgusted with nurses who can not understand what he wishes to say, it is hardly the fault of the hospital administration.

A seaman in one hospital was undergoing dietary treatment for gastric ulcer. He was given nothing but milk for a week and came to the conclusion that he was being starved (although this is an accepted form of treatment). He walked out of the hospital and collapsed upon the sidewalk, and it was only with difficulty that the hospital authorities would admit him again. Another seaman complained that he had been in bed for two weeks and the only change that had been made in his sheets was to turn the soiled side down. The standards and luxuries of American hospitals are not available to American seamen abroad and sometimes cause great discontent. If the port surgeon who sends a man to the hospital and who understands English were occasionally to visit the seaman many of the difficulties and discouragements of seamen would be overcome and care in hospitals would be made easier and more successful. As mentioned above, some of the port surgeons never visit the seamen whom they send to the hospital, and the other port surgeons do so very rarely. There is room for improvement in this respect. The port surgeon should be the connecting link between the ship and the hospital. He could also make more use of the out-patient departments of hospitals than he does at present.

A REVIEW OF CARBON-MONOXIDE POISONING

The United States Public Health Service has recently published a review of the literature on carbon-monoxide poisoning.[1] The historical statement points out that carbon-monoxide poisoning probably had its beginning during the prehistoric ages when man first came into possession of fire, although it was only comparatively recently that

[1] Public Health Bulletin No. 195.

the poisonous constituent in gas from burning carbonaceous material was determined to be carbon monoxide.

Each development of a more efficient method of producing heat for home and industrial fuel has so increased opportunities for poisoning by carbon monoxide that it has become one of the most frequent causes of accidents. A list is given of 24 possible sources of carbon monoxide in industrial life.

The first symptoms to attract attention were the subjective ones, such as headache, dizziness, disturbances of the stomach and heart, unconsciousness, and death. Later, objective symptoms, especially the peculiar coloring of the skin, and, with more intensive investigation, less obvious ones, such as hyperglycemia and glycosuria, were observed.

In the discussion of diagnosis of carbon-monoxide poisoning, attention is called to the necessity for doctors, coroners, safety engineers, and first-aid men to be able to recognize this poisoning, since the ordinary symptoms may be due to other causes. Methods are described for determining carbon monoxide in the air and in the blood.

A description is given of experiments that have been made to determine the division of a given amount of hemoglobin between the two gases, oxygen and carbon monoxide, the percentages of carbon monoxide in the air dangerous to breathe, and the length of time required for different percentages to cause symptoms in man and in animals. A table is given of the time required for various concentrations of carbon monoxide to produce 80 per cent of equilibrium value of blood saturation.

The pathology of carbon-monoxide poisoning developed rather slowly, owing to unscientific methods of conducting investigations and to a lack of knowledge of the processes of the human body on the part of investigators. The various theories held by investigators as to the pathological action of carbon monoxide are described. A great advance was made by the discovery that carbon monoxide displaces the oxygen in the oxyhemoglobin of the blood. This has led to the generally accepted theory that the pathological changes noted in the body are due to oxygen want, and that carbon monoxide has no pathological action other than that of displacing the oxygen in the hemoglobin of the blood and thus depriving the body of its necessary oxygen supply, with the resulting injury.

Methods of preventing carbon-monoxide poisoning, such as adequate ventilation, the proper adjustment and installation of gas heaters, and the use of protective devices when necessary to enter contaminated atmospheres, are discussed.

Under the heading of treatment are described the various methods that have been used, many of which have been discarded with advance in knowledge of the pathology of carbon-monoxide poisoning. The

best method so far found for emergency treatment is the administration of pure oxygen, or a mixture of 5 per cent carbon dioxide in oxygen, by means of an inhaler, together with the Schaefer prone pressure method of artificial respiration, if breathing has stopped or is weak and intermittent. The artificial respiration should be given persistently until normal breathing is resumed, or until after the heart has stopped.

The reports of 195 investigators and authors dealing with various phases of the subject of carbon-monoxide poisoning are reviewed, and a complete reference for each is given in the bibliography.

DEATHS DURING WEEK ENDED MAY 3, 1930

Summary of information received by telegraph from industrial insurance companies for the week ended May 3, 1930, and corresponding week of 1929. (From the Weekly Health Index, May 7, 1930, issued by the Bureau of the Census, Department of Commerce)

	Week ended May 3, 1930	Corresponding week, 1929
Policies in force	75, 786, 228	74, 084, 010
Number of death claims	15, 962	14, 945
Death claims per 1,000 policies in force, annual rate	11. 0	10. 5

Deaths from all causes in certain large cities of the United States during the week ended May 3, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, May 7, 1930, issued by the Bureau of the Census, Department of Commerce)

City	Week ended May 3, 1930		Annual death rate per 1,000 corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended May 3, 1930 [1]
	Total deaths	Death rate [1]		Week ended May 3, 1930	Corresponding week, 1929	
Total (64 cities)	7,775	13.7	12.6	747	673	[2] 65
Akron	33			2	4	18
Albany [4]	34	14.7	19.1	1	2	22
Atlanta	96	19.6	17.6	6	8	63
White	51			4	4	127
Colored	45	(3)	(3)	2	4	32
Baltimore [4]	251	15.8	11.7	14	14	48
White	174			11	6	47
Colored	77	(3)	(3)	3	8	49
Birmingham	83	19.5	13.8	4	8	37
White	41			1	3	15
Colored	42	(3)	(3)	3	5	71
Boston	259	16.9	14.3	25	19	70
Bridgeport	24			4	6	68
Buffalo	170	15.9	13.1	12	14	53
Cambridge	27	11.2	10.4	4	2	74
Camden	23	8.9	11.9	0	3	0
Canton	28	12.5	8.9	7	3	174
Chicago [4]	719	11.9	12.2	80	75	71
Cincinnati	152			9	10	53
Cleveland	250	12.9	10.7	26	23	78
Columbus	83	14.5	14.3	5	10	49
Dallas	53	12.7	12.0	8	8	----
White	40			6	7	----
Colored	13	(3)	(3)	2	1	----
Dayton	34	9.6	10.5	2	1	30

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended May 3, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, May 7, 1930, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended May 3, 1930		Annual death rate per 1,000 corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended May 3, 1930 [2]
	Total deaths	Death rate [1]		Week ended May 3, 1930	Corresponding week, 1929	
Denver	74	13.1	13.8	13	7	136
Des Moines	36	12.4	9.3	3	1	52
Detroit	322	12.2	13.3	42	47	65
Duluth	20	8.9	10.7	1	1	27
El Paso	41	18.1	12.8	9	0	
Erie	30			2	4	43
Fall River [4]	27	10.5	13.2	7	6	160
Flint	32	11.2	14.4	5	7	58
Fort Worth	33	10.1	8.9	1	3	
White	30			1	1	
Colored	3	(3)	(3)	0	2	
Grand Rapids	46	14.6	9.8	3	0	46
Houston	62			10	5	
White	39			5	2	
Colored	23	(3)	(3)	5	3	
Indianapolis	134	18.3	14.7	5	6	37
White	84			5	4	43
Colored	50	(3)	(3)	0	2	0
Jersey City	80	12.8	11.4	10	9	87
Kansas City, Kans	24	10.6	9.3	4	2	95
White	17			3	2	80
Colored	7	(3)	(3)	1	0	217
Kansas City, Mo	87	11.6	13.6	7	10	54
Knoxville	33	16.3	7.9	7	0	164
White	26			7	0	182
Colored	7	(3)	(3)	0	0	0
Los Angeles	189			18	13	55
Louisville	86	13.6	12.5	7	3	61
White	66			7	1	69
Colored	20	(3)	(3)	0	2	0
Lowell	25			4	4	95
Lynn	26	12.9	9.9	3	1	76
Memphis	94	25.8	17.5	9	4	107
White	41			4	1	74
Colored	53	(3)	(3)	5	3	169
Milwaukee	108	10.3	10.7	13	20	65
Minneapolis	100	11.4	13.4	7	11	45
Nashville	35	13.1	14.9	3	5	46
White	22			2	3	41
Colored	13	(3)	(3)	1	2	63
New Bedford	21			3	2	77
New Haven	68	18.9	13.3	3	1	58
New Orleans	154	18.7	18.7	13	16	75
White	97			6	6	53
Colored	57	(3)	(3)	7	10	118
New York	1,659	14.4	12.9	165	147	69
Bronx Borough	211	11.6	10.8	14	11	33
Brooklyn Borough	531	12.0	11.2	69	59	73
Manhattan Borough	713	21.2	18.1	65	63	107
Queens Borough	152	9.3	8.1	14	11	41
Richmond Borough	52	18.0	16.3	3	3	56
Newark, N. J	130	14.3	13.3	17	12	89
Oklahoma City	32			2	1	39
Omaha	61	14.3	14.0	5	3	57
Paterson	41	14.8	14.0	5	4	87
Philadelphia	496	12.5	11.5	46	35	68
Pittsburgh	218	16.9	12.7	19	25	70
Portland, Oreg	65			7	7	86
Providence	76	13.8	10.9	10	4	92
Richmond	54	14.5	12.9	3	4	44
White	34			1	2	22
Colored	20	(3)	(3)	2	2	87
Rochester	70	11.1	11.1	5	3	44
St. Louis	201	12.4	13.0	13	13	42
St. Paul	48			2	3	20
Salt Lake City [4]	33	12.5	12.8	5	6	79
San Antonio	78	18.6	18.4	13	12	
San Diego	31			1	1	21
San Francisco	143	12.7	12.0	7		48

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended May 3, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, May 7, 1930, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended May 3, 1930		Annual death rate per 1,000 corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended May 3, 1930 [2]
	Total deaths	Death rate [1]		Week ended May 3, 1930	Corresponding week, 1929	
Schenectady	29	16.2	13.4	1	3	31
Seattle	84	11.4	10.9	4	1	40
Somerville	25	12.7	11.7	0	3	0
Spokane	32	15.3	16.7	3	0	78
Springfield, Mass	39	13.6	11.5	2	2	32
Syracuse	58	15.2	12.3	8	6	99
Tacoma	22	10.4	13.2	1	0	26
Toledo	78	13.0	13.0	4	7	37
Trenton	45	16.9	12.0	3	1	56
Utica	33	16.5	17.0	4	2	114
Washington, D. C	154	14.5	13.1	17	11	99
White	101			11	4	95
Colored	53	[5]	[5]	6	7	106
Waterbury	16			1	1	26
Wilmington, Del	26	10.6	11.8	2	6	45
Worcester	61	16.1	10.3	8	0	104
Yonkers	20	8.6	7.3	1	1	24
Youngstown	39	11.7	8.1	7	4	110

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 72 cities.
[4] Deaths for week ended Friday.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended May 3, 1930, and May 4, 1929

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 3, 1930, and May 4, 1929

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929
New England States:								
Maine	1	3	2	----	110	125	0	0
New Hampshire	1	----	----	----	9	46	0	0
Vermont	----	----	----	----	49	6	0	0
Massachusetts	73	58	6	10	1,518	531	4	5
Rhode Island	7	8	----	----	7	100	0	0
Connecticut	6	14	1	6	43	376	4	0
Middle Atlantic States:								
New York	113	329	[1] 87	[1] 22	2,417	1,001	22	28
New Jersey	103	140	7	7	1,530	337	3	9
Pennsylvania	103	177	----	----	1,418	2,214	7	15
East North Central States:								
Ohio	22	49	13	23	900	1,962	5	19
Indiana	12	17	----	----	144	603	11	1
Illinois	159	199	10	16	626	2,082	10	15
Michigan	50	102	----	5	2,029	960	29	67
Wisconsin	18	13	16	20	697	1,535	4	3
West North Central States:								
Minnesota	30	16	1	1	209	698	2	4
Iowa	11	10	----	1	358	28	4	3
Missouri	35	35	1	32	147	206	10	15
North Dakota	3	5	----	----	26	119	5	4
South Dakota	3	3	----	----	61	32	0	1
Nebraska	15	15	----	1	826	50	2	3
Kansas	3	10	1	2	801	576	5	1
South Atlantic States:								
Delaware	----	3	----	----	18	13	0	0
Maryland [2]	16	21	25	11	79	29	4	1
District of Columbia	12	10	----	2	25	20	0	0
West Virginia	8	13	28	6	153	533	1	2
North Carolina	14	23	13	----	45	53	7	1
South Carolina	10	10	457	372	----	36	0	0
Georgia	7	7	15	20	260	38	0	0
Florida	5	9	1	----	220	71	0	0
East South Central States:								
Kentucky	----	----	----	----	175	29	0	1
Tennessee	4	6	24	40	236	63	5	2
Alabama	4	8	85	33	108	218	1	0
Mississippi	9	4	----	----	----	----	5	1

[1] New York City only.
[2] Week ended Friday.
[3] Figures for 1930 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 3, 1930, and May 4, 1929—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929
West South Central States:								
Arkansas	4	3	11	21	119	18	2	4
Louisiana	19	16	6	8	72	61	3	4
Oklahoma [3]	6	10	21	----	230	61	2	3
Texas	18	28	9	68	230	176	1	0
Mountain States:								
Montana	2	2	----	----	3	375	2	4
Idaho	3	----	----	4	2	4	5	6
Wyoming	1	3	----	1	19	39	0	0
Colorado	8	12	----	----	826	29	2	12
New Mexico	6	6	1	1	42	2	5	0
Arizona	----	1	2	----	175	1	3	4
Utah [2]	6	1	3	1	252	8	6	6
Pacific States:								
Washington	7	15	35	----	547	194	7	9
Oregon	3	7	10	22	100	278	0	3
California	43	55	15	26	2,053	101	4	24

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929
New England States:								
Maine	0	0	45	15	0	1	1	3
New Hampshire	0	0	24	10	0	1	0	1
Vermont	0	0	2	9	0	5	0	0
Massachusetts	1	3	235	268	0	1	1	3
Rhode Island	0	0	27	21	0	0	0	0
Connecticut	0	0	65	50	0	0	2	2
Middle Atlantic States:								
New York	2	1	556	502	19	3	12	19
New Jersey	0	0	224	178	0	0	0	2
Pennsylvania	2	0	403	504	1	0	8	26
East North Central States:								
Ohio	0	2	284	216	197	88	12	10
Indiana	0	0	166	422	164	85	3	3
Illinois	0	1	505	407	148	65	8	9
Michigan	2	1	273	588	65	43	7	4
Wisconsin	0	0	175	154	15	5	3	1
West North Central States:								
Minnesota	0	2	141	120	2	0	2	2
Iowa	0	0	57	118	93	57	0	7
Missouri	0	0	55	72	33	37	7	6
North Dakota	0	0	12	20	16	7	0	1
South Dakota	0	0	17	26	68	12	0	1
Nebraska	0	0	95	126	85	92	1	0
Kansas	0	0	106	128	49	54	4	3
South Atlantic States:								
Delaware	1	0	4	4	0	0	0	0
Maryland [3]	0	0	108	65	0	0	1	7
District of Columbia	0	0	23	15	0	0	0	2
West Virginia	1	0	39	29	39	5	13	14
North Carolina	0	1	40	19	15	12	1	6
South Carolina	2	4	7	12	0	10	8	14
Georgia	0	0	4	13	0	0	8	6
Florida	0	4	7	7	0	1	1	3
East South Central States:								
Kentucky	0	0	54	111	7	13	5	5
Tennessee	1	0	39	33	7	3	5	9
Alabama	0	0	8	12	6	3	6	9
Mississippi	0	1	8	21	11	0	5	5
West South Central States:								
Arkansas	0	0	1	23	4	2	3	1
Louisiana	1	0	18	52	7	7	11	5
Oklahoma [3]	0	1	17	25	67	66	4	0
Texas	0	0	26	71	40	51	6	3

[2] Week ended Friday.

[3] Figures for 1930 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 3, 1930, and May 4, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929	Week ended May 3, 1930	Week ended May 4, 1929
Mountain States:								
Montana	0	0	31	24	8	13	0	0
Idaho	0	1	7	4	5	25	1	0
Wyoming	0	0	3	3	11	11	0	0
Colorado	0	0	28	39	21	16	4	1
New Mexico	0	0	10	7	3	1	5	0
Arizona	1	0	17	6	17	10	1	4
Utah [2]	0	0	12	12	0	9	0	0
Pacific States:								
Washington	0	0	24	38	64	57	3	6
Oregon	0	0	11	24	31	28	4	1
California	4	1	133	384	50	68	13	10

[2] Week ended Friday.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
February, 1930										
Delaware	1	10	2	----	28	----	1	41	0	0
March, 1930										
Kansas	20	69	19	----	2,486	----	1	627	423	11
Massachusetts	24	282	50	1	3,798	----	1	1,171	1	8
April, 1930										
Indiana	56	83	66	----	599	----	0	749	690	10
Michigan	171	284	18	4	8,024	----	2	1,417	303	14
Nebraska	5	71	----	----	1,916	----	0	350	0	1
Porto Rico	----	33	22	626	144	3	1	----	0	21

February, 1930

Delaware:

	Cases
Anthrax	1
Chicken pox	40
Undulant fever	2
Whooping cough	3

March, 1930

Anthrax:

	Cases
Massachusetts	2

Chicken pox:

	Cases
Kansas	524
Massachusetts	974

Conjunctivitis:

	Cases
Kansas	1

Dysentery:

	Cases
Massachusetts	3

German measles:

	Cases
Kansas	85
Massachusetts	540

Impetigo contagiosa:

	Cases
Kansas	1

Lead poisoning:

	Cases
Massachusetts	3

Lethargic encephalitis:

	Cases
Kansas	1
Massachusetts	5

Mumps:

	Cases
Kansas	628
Massachusetts	1,022

Ophthalmia neonatorum:

	Cases
Massachusetts	106

Paratyphoid fever:

	Cases
Kansas	1

Scabies:

	Cases
Kansas	9

Septic sore throat:

	Cases
Kansas	1
Massachusetts	194

Tetanus:	Cases
Kansas	1
Massachusetts	3
Trachoma:	
Kansas	1
Massachusetts	1
Typhus fever:	
Kansas	1
Undulant fever:	
Massachusetts	1
Vincent's angina:	
Kansas	1
Whooping cough:	
Kansas	388
Massachusetts	1,503

April, 1930

Chicken pox:	
Indiana	298
Michigan	1,091
Nebraska	215
Colibacillosis:	
Porto Rico	3
Dysentery:	
Porto Rico	15
Filariasis:	
Porto Rico	4
Leprosy:	
Indiana	1
Porto Rico	1
Lethargic encephalitis:	
Michigan	4
Mumps:	
Indiana	38
Michigan	944
Nebraska	113
Porto Rico	6
Ophthalmia neonatorum:	
Porto Rico	1
Puerperal septicemia:	
Porto Rico	8
Septic sore throat:	
Michigan	33
Nebraska	5
Tetanus:	
Porto Rico	22
Trachoma:	
Porto Rico	3
Undulant fever:	
Indiana	3
Michigan	2
Nebraska	1
Whooping cough:	
Indiana	163
Michigan	590
Nebraska	131
Porto Rico	114

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,975,000. The estimated population of the 90 cities reporting deaths is more than 30,460,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended April 26, 1930, and April 27, 1929

	1930	1929	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	1,137	1,470	
96 cities	573	823	828
Measles:			
45 States	19,626	14,668	
96 cities	8,351	5,069	
Meningococcus meningitis:			
46 States	223	274	
96 cities	137	139	
Poliomyelitis: 47 States	13	27	
Scarlet fever:			
46 States	4,305	4,496	
96 cities	1,650	1,790	1,330
Smallpox:			
46 States	1,583	852	
96 cities	183	75	68
Typhoid fever:			
46 States	213	206	
96 cities	39	46	41
Deaths reported			
Influenza and pneumonia: 90 cities	911	749	
Smallpox: 90 cities	0	0	

City reports for week ended April 26, 1930

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	5	1	0	----------	0	0	37	3
New Hampshire:								
Concord	0	0	0	----------	0	0	0	3
Manchester	0	1	0	----------	0	0	0	4
Vermont:								
Barre	2	0	0	----------	0	7	0	0
Burlington	1	0	0	----------	0	1	0	0
Massachusetts:								
Boston	42	35	22	3	1	485	55	38
Fall River	1	3	1	1	1	1	1	3
Springfield	13	2	2	----------	0	0	4	1
Worcester	16	4	4	----------	0	192	1	2
Rhode Island:								
Pawtucket	4	1	0	----------	0	1	0	7
Providence	7	7	4	----------	0	1	0	5
Connecticut:								
Bridgeport	0	5	0	3	3	5	0	3
Hartford	7	5	1	----------	0	4	0	6
New Haven	18	1	1	----------	0	11	6	7
MIDDLE ATLANTIC								
New York:								
Buffalo	18	10	10	----------	0	38	8	22
New York	219	254	115	47	13	1,393	172	220
Rochester	13	8	2	----------	0	21	1	4
Syracuse	29	3	----------	----------	0	8	37	6
New Jersey:								
Camden	1	8	8	----------	0	2	1	5
Newark	19	14	32	2	0	433	22	8
Trenton	3	3	0	1	1	18	0	5
Pennsylvania:								
Philadelphia	110	62	13	8	4	375	103	61
Pittsburgh	40	16	38	1	0	339	7	18
Reading	7	2	0	----------	1	1	5	3
Scranton	5	3	0	----------	0	2	0	0
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	11	7	2	----------	1	48	10	12
Cleveland	112	24	13	4	4	8	42	22
Columbus	6	3	4	2	2	149	7	4
Toledo	38	3	3	1	1	103	25	2
Indiana:								
Fort Wayne	----------	2	----------	----------	----------	----------	----------	----------
Indianapolis	17	4	2	----------	0	6	6	14
South Bend	0	1	0	----------	0	0	0	2
Terre Haute	3	1	0	----------	0	15	0	1
Illinois:								
Chicago	124	83	124	8	10	42	90	63
Springfield	6	0	0	----------	0	2	0	0

City reports for week ended April 26, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued								
Michigan:								
Detroit	54	43	33	3	2	1,218	38	35
Flint	16	3	0		0	103	1	4
Grand Rapids	9	2	0		0	2	3	1
Wisconsin:								
Kenosha	8	0	0		0	2	0	0
Madison	14	0	0		0	27	1	6
Milwaukee	120	11	4	2	2	9	58	13
Racine	0	2	0		0	3	0	0
Superior	2	0	0		0	4	0	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth	9	0	0		0	73	0	0
Minneapolis	66	13	0		2	51	75	3
St. Paul	27	8	0	1	1	6	15	8
Iowa:								
Davenport	0	0	0			36	0	
Des Moines	0	1	0			7	0	
Sioux City		0						
Waterloo	14	0	0			2	0	
Missouri:								
Kansas City	21	4	5		0	8	4	5
St. Joseph	1	0	0		0	2	0	2
St. Louis	41	31	22	1		11	20	
North Dakota:								
Fargo	0	0	0		0	0	36	1
Grand Forks	0	0	0			0	0	
South Dakota:								
Sioux Falls	0	0	1			11	0	
Nebraska:								
Omaha	12	2	7		0	99	1	7
Kansas:								
Topeka	9	1	0		0	146	18	0
Wichita	24	1	1		0	97	1	1
SOUTH ATLANTIC								
Delaware:								
Wilmington	3	2	2		0	8	1	3
Maryland:								
Baltimore	173	22	5	11	3	20	21	32
Cumberland	3	0	1		0	0	0	0
Frederick	0	0	0		0	0	0	0
District of Columbia:								
Washington	30	11	13	3	0	30	0	20
Virginia:								
Lynchburg	9	1	2		0	101	9	1
Norfolk	24	0	1		0	5	61	3
Richmond	0	1	1		0	0	4	7
Roanoke	9	1	0		0	331	1	0
West Virginia:								
Charleston	3	0	2	2	0	7	1	2
Wheeling	16	2	0		0	6	0	4
North Carolina:								
Raleigh	5	0	0		0	0	0	0
Wilmington	8	0	1		0	0	0	2
Winston-Salem	19	0	2		0	1	18	1
South Carolina:								
Charleston	2	0	0	21	1	0	1	6
Columbia	3	0	0		0	0	1	4
Georgia:								
Atlanta	8	2	2	19	1	43	18	17
Brunswick	0	0	0		0	0	0	0
Savannah	3	0	1	2	0	1	0	1
Florida:								
Miami	3	1	1		0	12	2	3
St. Petersburg		0			0			1
Tampa	5	1	0		1	104	16	5

City reports for week ended April 26, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	0	0	----------	0	0	0	1
Tennessee:								
Memphis	10	2	1	----------	1	1	23	8
Nashville	12	1	3	----------	1	31	0	6
Alabama:								
Birmingham	3	1	4	7	4	14	2	14
Mobile	0	1	0	----------	0	2	0	6
Montgomery	5	1	0	----------	----------	20	0	----------
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	1	1	0	----------	----------	51	0	----------
Little Rock	1	0	0	----------	0	2	0	6
Louisiana:								
New Orleans	1	7	18	7	3	11	0	15
Shreveport	6	1	0	----------	0	7	5	1
Oklahoma:								
Oklahoma City	3	2	1	1	0	41	2	3
Tulsa	4	1	0	----------	----------	100	0	----------
Texas:								
Dallas	14	3	3	----------	1	95	1	3
Fort Worth	6	1	0	----------	0	17	1	7
Galveston	0	0	0	----------	0	0	0	1
Houston	5	3	6	----------	0	1	0	8
San Antonio	1	2	2	----------	3	3	0	3
MOUNTAIN								
Montana:								
Billings	0	0	0	----------	0	1	6	0
Great Falls	1	0	0	----------	0	3	8	1
Helena	0	0	0	----------	0	0	0	0
Missoula	0	0	0	----------	0	0	0	0
Idaho:								
Boise	0	0	0	----------	0	0	1	2
Colorado:								
Denver	46	10	9	----------	2	771	26	11
Pueblo	5	1	0	----------	0	6	103	0
New Mexico:								
Albuquerque	7	0	1	----------	0	17	2	1
Arizona:								
Phoenix	1	0	0	----------	0	10	0	1
Utah:								
Salt Lake City	5	3	1	----------	0	216	8	3
Nevada:								
Reno	1	0	0	----------	0	2	0	0
PACIFIC								
Washington:								
Seattle	33	2	1	----------	----------	254	81	----------
Spokane	32	2	1	----------	----------	5	0	----------
Tacoma	6	1	0	----------	0	70	0	1
Oregon:								
Portland	11	7	7	1	0	34	6	7
Salem	6	0	2	----------	0	1	7	0
California:								
Los Angeles	81	35	13	16	0	494	63	15
Sacramento	2	2	3	----------	0	36	26	0
San Francisco	36	17	6	1	0	162	58	4

City reports for week ended April 26, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	3	5	0	0	0	0	0	0	0	1	17
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	9
Manchester	4	0	0	0	0	1	0	0	0	0	26
Vermont:											
Barre	1	0	0	0	0	1	0	0	0	0	3
Burlington	1	0	0	0	0	0	0	0	0	0	11
Massachusetts:											
Boston	69	86	0	0	0	12	1	0	0	52	237
Fall River	4	4	0	0	0	1	0	0	0	2	28
Springfield	9	10	0	0	0	0	0	0	0	5	38
Worcester	7	6	0	0	0	2	0	1	0	17	49
Rhode Island:											
Pawtucket	1	0	0	0	0	0	0	0	0	6	14
Providence	10	17	0	0	0	2	0	1	0	25	48
Connecticut:											
Bridgeport	11	6	0	0	0	2	0	0	0	0	41
Hartford	5	4	0	0	0	5	1	0	0	2	53
New Haven	7	6	0	0	0	1	1	0	0	10	49
MIDDLE ATLANTIC											
New York:											
Buffalo	26	24	0	1	0	10	0	0	0	9	153
New York	208	267	0	0	0	73	9	8	0	53	1,577
Rochester	13	8	0	0	0	3	0	0	0	2	72
Syracuse	11	23	0	0	0	1	0	1	0	55	54
New Jersey:											
Camden	5	3	0	0	0	2	0	1	0	0	47
Newark	31	36	0	0	0	8	1	0	0	10	101
Trenton	4	11	0	0	0	5	1	0	1	0	40
Pennsylvania:											
Philadelphia	94	136	0	0	0	43	3	0	0	17	543
Pittsburgh	30	18	0	0	0	12	0	0	0	27	179
Reading	6	1	0	0	0	0	0	0	0	14	31
Scranton	2	3	0	0	------	------	0	2	------	1	------
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	16	21	2	4	0	8	1	2	0	4	121
Cleveland	38	52	0	3	0	15	0	2	0	39	199
Columbus	7	5	1	8	0	3	0	1	1	11	399
Toledo	13	12	1	7	0	11	0	0	0	3	83
Indiana:											
Fort Wayne	4	------	1	------	------	------	0	------	------	------	------
Indianapolis	11	24	7	4	0	3	0	1	0	6	------
South Bend	4	14	1	1	0	2	0	0	0	0	17
Terre Haute	2	4	0	0	0	0	0	0	0	1	17
Illinois:											
Chicago	117	266	2	4	0	45	2	1	0	59	820
Springfield	5	1	0	0	0	2	0	0	0	3	18
Michigan:											
Detroit	108	132	1	1	0	29	1	2	1	58	336
Flint	8	19	2	0	0	5	1	0	0	10	31
Grand Rapids	9	10	1	1	0	0	0	0	0	4	26
Wisconsin:											
Kenosha	2	1	0	0	0	0	0	0	0	1	8
Madison	3	3	0	0	0	1	0	0	0	19	36
Milwaukee	29	22	2	0	0	5	0	1	0	26	118
Racine	5	6	0	0	0	0	0	0	0	1	12
Superior	3	0	0	0	0	0	1	0	0	0	5
WEST NORTH CENTRAL											
Minnesota:											
Duluth	7	4	0	0	0	1	0	0	0	23	20
Minneapolis	46	17	2	1	0	6	0	0	0	2	122
St. Paul	27	10	1	0	0	1	0	0	0	16	60
Iowa:											
Davenport	2	1	1	14	------	------	0	0	------	0	------
Des Moines	6	12	1	14	------	------	0	0	------	0	35
Sioux City	1	------	0	------	------	------	0	------	------	------	------
Waterloo	2	1	0	25	------	------	0	0	------	0	------

City reports for week ended April 26, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	15	7	1	3	0	5	1	1	0	9	108
St. Joseph	3	5	0	0	0	0	0	0	0	0	27
St. Louis	33	57	3	6	0	17	1	0	0	17	244
North Dakota:											
Fargo	1	2	0	0	0	1	0	0	0	2	9
Grand Forks	1	0	0	3	----	----	0	0	----	0	----
South Dakota:											
Sioux Falls	1	0	1	0	----	----	0	0	----	0	8
Nebraska:											
Omaha	3	6	4	36	0	1	0	1	0	2	8
Kansas:											
Topeka	3	4	0	1	0	0	0	0	0	35	3
Wichita	3	14	1	1	0	0	0	0	1	5	31
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	5	0	0	0	0	0	0	0	0	38
Maryland:											
Baltimore	33	84	0	0	0	13	2	2	0	14	235
Cumberland	0	0	0	0	0	0	0	0	0	0	11
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	24	10	1	0	0	8	1	0	0	2	157
Virginia:											
Lynchburg	0	0	0	0	0	0	0	0	0	7	10
Norfolk	2	4	0	0	0	2	0	0	0	1	----
Richmond	3	7	0	0	0	1	1	0	0	0	50
Roanoke	1	0	1	0	0	0	0	0	0	7	15
West Virginia:											
Charleston	1	0	0	0	0	0	0	2	0	4	15
Wheeling	2	1	0	0	0	0	1	0	0	3	24
North Carolina:											
Raleigh	0	0	1	0	0	2	0	0	0	3	21
Wilmington	0	0	0	0	0	1	0	0	0	10	15
Winston-Salem	0	0	2	0	0	3	0	0	0	3	10
South Carolina:											
Charleston	0	0	0	0	0	4	0	0	0	0	37
Columbia	0	0	0	0	0	0	0	0	0	5	19
Georgia:											
Atlanta	4	16	3	0	0	5	1	0	0	0	----
Brunswick	0	0	0	0	0	1	0	0	0	0	6
Savannah	1	0	1	0	0	0	0	2	0	0	34
Florida:											
Miami	0	0	0	0	0	4	1	0	0	5	28
St. Petersburg	0	----	0	----	0	0	0	----	0	----	10
Tampa	0	1	0	0	0	0	1	0	0	0	25
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	0	0	0	0	0	0	0	0	0	18
Tennessee:											
Memphis	7	16	1	0	0	3	1	0	0	4	80
Nashville	1	2	1	7	0	5	0	0	0	2	44
Alabama:											
Birmingham	2	2	3	0	0	4	1	0	0	7	60
Mobile	0	0	0	0	0	1	0	0	0	1	29
Montgomery	1	1	0	0	----	----	0	0	----	1	----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	----	----	0	0	----	2	----
Little Rock	0	0	0	1	0	3	0	0	0	0	----
Louisiana:											
New Orleans	7	10	0	0	0	13	2	5	1	3	172
Shreveport	0	0	0	0	0	0	1	0	0	0	27
Oklahoma:											
Oklahoma City	2	20	2	14	0	1	0	0	0	0	27
Tulsa	1	4	2	1	----	----	0	0	----	14	----
Texas:											
Dallas	3	4	2	3	0	4	0	1	0	1	54
Fort Worth	1	3	5	7	0	0	1	0	0	0	28
Galveston	0	0	0	0	0	0	0	0	0	0	9
Houston	1	0	0	4	0	3	0	1	1	0	72
San Antonio	1	3	0	3	0	13	1	0	0	0	79

City reports for week ended April 26, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	0	11
Great Falls	0	13	1	0	0	0	0	0	0	0	15
Helena	0	0	0	0	0	0	0	0	0	2	2
Missoula	1	0	0	5	0	0	0	0	0	0	3
Idaho:											
Boise	1	1	0	0	0	0	0	0	0	0	8
Colorado:											
Denver	12	7	0	0	0	9	0	0	0	74	67
Pueblo	1	0	0	1	0	1	0	0	0	4	5
New Mexico:											
Albuquerque	1	0	0	0	0	2	0	0	0	0	10
Arizona:											
Phoenix	0	2	0	4	0	4	0	0	0	0	19
Utah:											
Salt Lake City	2	2	1	0	0	2	0	0	0	46	38
Nevada:											
Reno	0	3	0	5	0	0	0	0	0	0	7
PACIFIC											
Washington:											
Seattle	7	17	4	3	----	----	1	0	----	20	----
Spokane	5	1	8	30	----	----	0	0	----	21	----
Tacoma	2	1	2	0	0	1	0	0	0	7	25
Oregon:											
Portland	5	2	8	19	0	4	1	2	0	25	78
Salem	0	1	1	0	0	0	0	0	0	1	----
California:											
Los Angeles	28	42	5	12	0	23	2	0	0	21	251
Sacramento	2	4	1	7	0	2	0	1	0	0	25
San Francisco	20	22	1	2	0	8	0	1	0	1	163

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	0	0	0	0	0	0	0
Worcester	1	0	0	0	0	0	0	0	0
Connecticut:									
Bridgeport	0	1	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	2	0	0	0	0	0	0	0	0
New York	11	6	3	1	0	0	1	0	0
Syracuse	1	0	0	0	0	0	0	0	0
New Jersey:									
Newark	4	0	0	0	0	0	0	2	0
Pennsylvania:									
Philadelphia	5	1	0	0	0	0	0	0	0
Pittsburgh	12	1	0	0	0	0	0	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	1	0	0	0	0	0	0	0	0
Cleveland	4	1	0	0	0	0	0	0	0
Columbus	0	0	1	1	0	0	0	0	0
Toledo	1	0	0	0	0	0	0	0	0
Indiana:									
Indianapolis	3	6	0	0	0	0	0	0	0
South Bend	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	10	5	0	0	0	0	0	0	0
Michigan:									
Detroit	21	9	1	1	0	0	0	0	0

City reports for week ended April 26, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST NORTH CENTRAL									
Iowa:									
Waterloo	3	2	0	0	0	0	0	0	0
Missouri:									
Kansas City	4	2	0	0	0	0	0	0	0
St. Joseph	0	1	0	0	0	0	0	0	0
St. Louis	4	3	0	0	0	0	0	0	0
Nebraska:									
Omaha	1	0	0	0	0	0	0	0	0
Kansas:									
Topeka	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	2	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	1	1	0	0	1	0	0	0	0
West Virginia:									
Charleston	1	1	0	0	0	0	0	0	0
North Carolina:									
Winston-Salem	0	0	0	0	1	0	0	0	0
South Carolina:									
Charleston	0	0	0	0	4	2	0	0	0
Columbia	1	0	0	0	0	0	0	0	0
Georgia:									
Atlanta	0	1	0	0	0	1	0	0	0
Savannah [1]	1	0	0	0	1	0	0	0	0
Florida:									
Miami	0	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	24	10	0	0	0	0	0	0	0
Nashville	0	1	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	1	0	0	0	0	0
Mobile	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	2	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	1	2	0	0	0	0	1	1	1
Texas:									
Dallas	1	1	0	0	2	3	0	0	0
Houston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Billings	1	1	0	0	0	0	0	0	0
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	3	3	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	9	0	0	0	0	0	0	0	0
Tacoma	1	0	0	0	0	0	0	0	0
Oregon:									
Portland	0	0	4	0	0	0	0	0	0
California:									
Los Angeles	0	1	0	0	0	0	0	1	0
San Francisco	0	2	0	0	3	0	0	0	0

[1] Typhus fever: 1 case at Savannah, Ga.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended April 26, 1930, compared with those for a like period ended April 27, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities, March 23 to April 26, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929 [1]

DIPHTHERIA CASE RATES

	Week ended									
	Mar. 29, 1930	Mar. 30, 1929	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929	Apr. 26, 1930	Apr. 27, 1929
98 cities	84	128	[2] 81	131	95	124	88	135	[3] 93	136
New England	51	101	[4] 68	135	75	117	109	141	78	110
Middle Atlantic	84	187	78	190	97	166	87	198	104	194
East North Central	115	119	108	125	115	126	96	122	[5] 116	143
West North Central	63	139	51	75	87	83	85	112	[6] 68	85
South Atlantic	64	66	59	82	73	71	59	66	59	58
East South Central	54	41	34	27	7	75	20	7	54	55
West South Central	134	118	[7] 161	114	164	122	220	99	108	126
Mountain	43	44	[8] 27	44	77	61	9	70	86	78
Pacific	40	29	59	58	59	65	43	58	57	58

MEASLES CASE RATES

98 cities	899	716	[2] 1,041	839	1,222	824	1,255	896	[3] 1,362	838
New England	1,023	467	[4] 1,443	521	1,431	638	1,491	498	1,566	561
Middle Atlantic	644	154	832	174	1,019	160	1,156	146	1,256	153
East North Central	661	1,592	807	1,836	913	1,946	1,084	2,028	[5] 1,023	1,964
West North Central	890	1,784	842	1,963	1,174	1,657	988	2,124	[6] 968	1,713
South Atlantic	637	414	793	650	976	464	996	760	1,194	536
East South Central	1,093	89	594	89	371	130	337	55	459	21
West South Central	841	95	[7] 936	248	773	232	538	175	635	278
Mountain	3,424	409	[8] 4,883	618	7,475	192	6,617	209	8,573	366
Pacific	2,549	232	2,343	273	2,402	319	2,100	377	2,412	377

SCARLET FEVER CASE RATES

98 cities	315	318	[2] 308	290	327	270	305	268	[3] 269	295
New England	332	391	[4] 418	341	321	317	368	242	319	292
Middle Atlantic	315	264	308	244	296	224	276	224	252	246
East North Central	386	453	381	426	428	372	395	418	[5] 366	451
West North Central	300	310	266	275	391	242	359	216	[6] 248	281
South Atlantic	249	167	253	94	282	122	277	90	227	97
East South Central	263	267	162	212	148	185	162	144	142	109
West South Central	120	274	[7] 188	270	116	229	123	225	64	217
Mountain	446	78	[8] 155	104	326	165	343	70	223	122
Pacific	239	311	196	314	253	374	168	372	205	394

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1930 and 1929, respectively.
[2] New Haven, Conn., San Antonio, Tex., and Great Falls, Mont., not included.
[3] Fort Wayne, Ind., and Sioux City, Iowa, not included.
[4] New Haven, Conn., not included.
[5] Fort Wayne, Ind., not included.
[6] Sioux City, Iowa, not included.
[7] San Antonio, Tex., not included.
[8] Great Falls, Mont., not included.

Summary of weekly reports from cities, March 23 to April 26, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

SMALLPOX CASE RATES

	Week ended									
	Mar. 29, 1930	Mar. 30, 1929	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929	Apr. 26, 1930	Apr. 27, 1929
98 cities	23	16	[2] 24	11	29	12	28	9	[2] 30	13
New England	2	11	[4] 0	2	2	2	2	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	18	17	30	15	23	20	23	11	[5] 17	17
West North Central	97	25	85	17	146	8	137	10	[6] 143	13
South Atlantic	7	13	2	4	9	4	4	2	0	2
East South Central	20	41	0	7	13	7	20	0	47	0
West South Central	49	91	[7] 22	76	30	76	75	11	41	23
Mountain	26	44	[8] 109	26	60	78	26	44	94	26
Pacific	83	22	83	17	104	10	83	60	128	80

TYPHOID FEVER CASE RATES

98 cities	8	10	[3] 5	5	5	12	6	10	[3] 6	8
New England	2	4	[4] 5	4	0	9	7	7	4	4
Middle Atlantic	15	5	3	2	1	7	2	8	5	4
East North Central	3	17	2	7	1	11	3	4	[5] 6	4
West North Central	4	8	2	4	4	25	8	10	[6] 4	12
South Atlantic	5	13	4	4	20	13	20	24	11	17
East South Central	34	27	34	7	20	21	7	7	0	21
West South Central	7	19	[7] 13	8	7	42	7	42	26	34
Mountain	0	0	[8] 18	0	43	0	17	0	0	0
Pacific	2	0	7	7	5	7	9	10	5	7

INFLUENZA DEATH RATES

91 cities	14	18	[3] 13	20	17	15	15	15	[6] 12	13
New England	9	4	[4] 7	11	7	7	7	9	11	7
Middle Atlantic	11	12	15	16	21	14	15	10	9	12
East North Central	11	16	10	18	8	15	13	14	[5] 13	6
West North Central	6	18	9	27	9	6	18	18	9	12
South Atlantic	15	22	7	17	24	17	20	21	11	13
East South Central	110	90	44	75	52	30	66	15	44	30
West South Central	34	35	[7] 32	47	27	31	27	51	27	43
Mountain	51	52	[8] 27	44	26	17	9	9	17	52
Pacific	3	16	0	19	15	22	3	13	0	13

PNEUMONIA DEATH RATES

91 cities	167	157	[3] 164	149	169	139	153	127	[6] 144	117
New England	202	171	[4] 164	101	171	126	146	114	173	144
Middle Atlantic	197	180	194	178	195	161	190	134	168	130
East North Central	118	132	146	135	126	126	115	119	[5] 109	99
West North Central	133	159	115	147	148	114	154	108	80	111
South Atlantic	194	159	179	144	211	165	185	146	192	127
East South Central	258	172	177	142	228	164	236	157	258	97
West South Central	176	125	[7] 157	137	195	90	130	78	142	90
Mountain	172	131	[8] 191	122	180	113	163	123	146	87
Pacific	114	151	77	126	89	94	46	151	61	119

[2] New Haven, Conn., San Antonio, Tex., and Great Falls, Mont., not included.
[3] Fort Wayne, Ind., and Sioux City, Iowa, not included.
[4] New Haven, Conn., not included.
[5] Fort Wayne, Ind., not included.
[6] Sioux City, Iowa, not included.
[7] San Antonio, Tex., not included.
[8] Great Falls, Mont., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended April 19, 1930.—The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended April 19, 1930, as follows:

Province	Cerebro-spinal fever	Influenza	Small-pox	Typhoid fever
Prince Edward Island [1]				
Nova Scotia		3		
New Brunswick [1]				
Quebec	2			3
Ontario	3	2	43	1
Manitoba	1			
Saskatchewan			10	
Alberta	1		1	12
British Columbia			1	
Total	7	5	55	16

[1] No case of any disease included in the table was reported during the week.

Quebec—Communicable diseases—Weeks ended April 19 and 26, 1930.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the weeks ended April 19 and 26, 1930, as follows:

Disease	Week ended—		Disease	Week ended—	
	Apr. 19, 1930	Apr. 26, 1930		Apr. 19, 1930	Apr. 26, 1930
Cerebrospinal meningitis	2	6	Mumps	109	84
Chicken pox	39	66	Puerperal septicemia	2	4
Diphtheria	24	28	Scarlet fever	83	81
Erysipelas	2	8	Smallpox	3	
German measles	30	41	Tuberculosis	51	35
Influenza	3	4	Typhoid fever	3	22
Measles	183	85	Whooping cough	30	39

CUBA

Habana—Communicable diseases—April, 1930.—During the month of April, 1930, certain communicable diseases were reported in the city of Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox	42		Measles	6	
Diphtheria	13	2	Scarlet fever	24	
Leprosy	2		Tuberculosis	51	14
Malaria [1]	8		Typhoid fever [1]	13	1

[1] Some of these cases were from the interior.

CHINA

Meningitis.—During the week ended April 26, 1930, two cases of meningitis, with two deaths, were reported at Hong Kong, China. Two cases of meningitis, with two deaths, were also reported at Canton during the week ended April 19.

PHILIPPINE ISLANDS

Meningitis.—During the week ended May 3, 1930, two cases of meningitis, with one death, were reported in Manila, P. I.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930			
						15	22	1	8	15	22	29	5	12	19	26
China:																
Canton	C		2													
Hankow	C	2														
Manchuria—Dairen	C								1							
Nanking	C	P														
Swatow	D	12	2													
India	C	17,340	19,582	12,350	6,461	1,577	1,258	1,515								
	D	10,680	10,903	6,507	3,606	877	765	900								
Bassein	C													3		
Bombay	C												4			
Calcutta	C	252	265	138	202	65	46	53	105	97	53	110	90			
	D	129	114	90	110	45	27	25	56	73	23	51	5			
Madras	C	3	2													
	D	2	2													
Negapatam	C	2		1	12											
	D			1	4											
Rangoon	C	2	1	6	3		1	1	1	1	1					
	D	2	1	5	3		1			1	1					
Tuticorin	C	5	23	35	3											
	D	3	6	9	1											
India (French):																
Chandernagor	C	5	14	1		1	2	1		1						
	D	5	12	1				1	1		1					
Karikal	C			1			2	1	1			1				
	D							1				1				
Pondicherry Province	C		4													
	D		3													
Indo-China (see also table below):																
Pnompenh	C	43	4	3	11		2	5	2							
	D	37	3	3	8	1	2	3	1	1	2	1	2			
Saigon and Cholon	C	1	2	1	2				5	1	6	1	6	17	12	
	D			1	2				4	1	5			10	10	

Siam	C		7	11	3	1	3		3				1	8					
	D		3	2			1		3					6					
Bangkok	C		5	9	3	1	1				1		1	1	5				
	D		1	1									1	1	2				
Nagara Pathom	C								1										4
	D								1										2
On vessel:																			
S. S. at Suva, Fiji Islands	C							1											
S. S. Sutley, at Batavia, from Calcutta	C					1													

Place		October, 1929	November, 1929	December, 1929			January, 1930			February, 1930			March, 1930	
				1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-28	1-10	11-20
Indo-China (French) (see also table above):														
Annam [1]	C		2				1			2	2			
Cambodia [1]	C	221	43		41		71		76	41	3	46	49	32
Cochin-China [1]	C	3	15		46		67		110	64	39	21	5	22

PLAGUE

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended—														
					January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Argentina:																			
Andalgala.[2]																			
Rosario	C	2						P											
Plague-infected rats		3																	
Santa Fe	C	1					6												
Tucuman	C	1																	
Villa Lia	D										2								
Azores: Ponta Delgada	C			P															
Belgian Congo: Djugu	D		2																

[1] Reports incomplete.
[2] On Mar. 11, 3 deaths from bubonic plague were reported in Andalgala, Catamarca Province, Argentina, since Feb. 5, 1930.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Brazil:																			
Rio de Janeiro	C						1												
	D						1												
Sao Paulo.[1]																			
British East Africa (see also table below):																			
Tanganyika	C											7						11	
	D																	10	
Uganda	C	336	281	127	35	25	22				23	24	30						
	D	310	262	112	29	21	20				22	21	26						
Ceylon:																			
Colombo	C		5	2	3			1	2			1		1	1	2	1		
	D		4	1	3			1	2			1		1	1	2	1		
Plague-infected rats			1					1	1		1	1		2			2		
Chile: Antofagasta	C				1				1							1			
	D															2			
Dutch East Indies:																			
Batavia and West Java	C	266	340	286	35	43	46	43	31	38	38	46	34						
	D	262	335	280	35	43	44	42	30	37	37	46	33						
Plague-infected rats		1	8		2		1			2	1			2		1			
Celebes—Makassar	C		1			1													
	D					1													
Plague-infected rodents			1	4															
East Java and Madura	C	41	29	2															
	D	43	29	2															
Java and Madura	D	475	537	458	71	92	80	74	64	69	105	58	59						
Surabaya	C		4																
	D		4																
Ecuador (see table below).																			
Egypt:																			
Alexandria	C	11	6	2			1	3			1		1	1	1	1			1
	D	4	3	3				1						1					
Assiout	C		1	4															7
	D		1	2															3
Assuan	C			2															

| | | |

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Siam	C	1	3	11	2	1	2	3	4	5	5	3	1	4					
	D	1	3	9	2	1	1	2	4	4	3	2	1	3					
Bangkok	C			1								1	1	1	2	1			
	D			1								1	1	1	2				
Nagara Pathom	C		1	6	1	1	2	3	3	1		1				1	4		
	D		1	5	2	2	1	2	4	1		1				1	4		
Nagara Rajsima	C			2	1	1			1	1						1			
	D			1												1			
Syria: Beirut	C		1																
Tunisia:																			
Sfax district	C	34	20	14	3	1	11	3	19		3								P
Tunis	C	41		42	1			5			1		1						
	D			21															
Union of Socialist Soviet Republics: Kazaks	C			P															
Union of South Africa:																			
Cape Province	C	13	4					1		2				1					
	D	5		7						1				1					
Orange Free State	C	7	6	5	1	6	5	3	4	2	3	2	3	1					
	D	4	3	1	1	3	2	3	1	1		1	2	1					
Transvaal	C				1	3	2	2		1	1								
	D				1	2													
On vessel:																			
At Rio de Janeiro, Brazil, from Argentina	C						1												

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
British East Africa (see also table above):							
Kenya	C	146	157	54	34	------	------
Uganda	C	384	179	216	87	------	------
	D	351	164	199	75	------	------
Ecuador: Guayaquil	C	12	14	17	8	2	2
	D	4	3	6	4	2	------
Plague-infected rats		------	9	13	4	2	2
Greece (see also table above)	C	5	2	1	------	------	------
	D	2	1	------	------	------	------
Indo-China (see also table above)	C	------	------	10	10	30	27
Madagascar (see also table above)	C	203	182	264	282	------	------
	D	193	163	248	258	------	------
Ambositra Province	C	2	42	111	128	------	------
	D	2	33	96	111	------	------
Antisirabe Province	C	17	5	16	26	------	------
	D	17	5	16	25	------	------
Itasy Province	C	------	10	19	31	------	------
	D	------	10	16	31	------	------
Miarinarivo	C	12	5	3	------	------	------
	D	11	5	3	------	------	------

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Madagascar (see also table above)—Continued.							
Moramanga Province	C	27	4	12	7	------	------
	D	27	3	12	7	------	------
Tamatave Province	C	5	------	2	3	------	------
	D	4	------	2	1	------	------
Tananarive Province	C	141	103	97	88	------	------
	D	132	93	98	83	------	------
Peru	C	1	------	------	------	------	------
Senegal:							
Baol [1]	C	45	23	5	------	------	18
	D	13	16	2	------	------	8
Dakar [1]	C	3	17	8	------	------	------
	D	2	5	1	------	------	------
Louga [1]	C	41	------	------	------	2	------
	D	24	1	------	------	------	------
Thies [1]	C	3	------	------	3	------	3
	D	3	------	------	------	------	2
Tivaouane [1]	C	41	8	------	1	------	11
	D	21	4	------	------	------	8

SMALLPOX

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930			
						15	22	1	8	15	22	29	5	12	19	26
Algeria:																
Algiers	C	2	3	------	6	------	------	1	------	2	2	1	------	------	------	------
Constantine	C	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------
Oran	C	------	3	------	5	------	------	------	------	1	------	------	------	------	------	------
Arabia: Aden	C	2	4	1	1	1	------	1	------	------	1	1	1	------	------	------
	D	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------
Bolivia: La Paz (see table below).																

[1] Incomplete reports.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930: 15	22	March, 1930: 1	8	15	22	29	April, 1930: 5	12	19	26
Brazil:																
Porto Alegre	C	5														
Rio de Janeiro	C			1												
British Borneo: Sarawak	C				4	2	15	2								
British East Africa (see table below):																
Tanganyika	C	41	50	27	5			13	36	17	32		1			
	D	4	10	5				1	7	3	1					
British South Africa:																
Northern Rhodesia	C	907	54													
Southern Rhodesia	C	6	58	33	1	6										
	D		4	6												
Canada:																
Alberta	C	12	22	16	22		1	3		2	5	2	1	3		
Edmonton	C	12	11	15	19		1			1		1	2			
British Columbia—Vancouver	C	9	14	17	16	5	4	1	6	1	7	3	9	8		5
Manitoba	C	2	6	8	6	2				2	1	1		2		
Ontario	C	17	63	51	63		28	8	50	38	27	26	9	17		
Fort William	C				4											
London	C	4														
Niagara Falls	C	1														
North Bay	C	5	2		2			1								
Ottawa	C	1	4	7	10	1	2	2	6	9		6	4	8	4	7
Sarnia	C	1														
Toronto	C	2			2											
Windsor	C	2														
Quebec	C	22	10	3	11											
Montreal	C				1											
Saskatchewan	C	11	40	61	86	2	64		10	9	11	15	12	3		
Regina	C			31												
Saskatoon	C	13														
Ceylon:																
Angoda, Western Province	C						10									
	D						1									
Colombo	C			1	1	2	1									
	D					2										

China:																		
Canton	C		4	5	7	4	4	1	2	1	1	4			2			
	D				2	2	1				1		1		1			
Chungking	C	P	P	P	P	P		P	P	P	P	P						
	C	P	P	P	P	P		P										
Foochow	C	15	62	102	118	18	18	16	10	12	10	5	11	20	7			
Hong Kong	D	13	55	73	109	15	15	11	10	6	10	4	5	11	9	3		
Manchuria—																		
Harbin	C	1	2	1	3				1						1			
Kwantung—Dairen	C	1		1	6		4			P				P				
Nanking	C	P		P	P	P												
Shanghai—									2	1		1						
Foreigners only	C	4	5	7	5				1	4	1	3	2	4				
	D	1	2	6	8	1	3	2			3	2	1	2				
Including natives	D			2	3	3	1	2			2							
Swatow	C	1	4	2	1		1											
Tientsin																		
Chosen (see table below).																		
Colombia:																		
Barranquilla	C			1		100	1	1		1	1			1				
Buenaventura	C	50	56	13		1												
	D		1									10		7				
Costa Rica: San Jose [1]	C									10	3							
Curacao (alastrim)	C																	
Dutch East Indies:																		
Belawan Deli	C	4	1	1														
Borneo—Samarinda	C	8																
Java—												1		2				
Batavia and West Java	C	11	37	17	14	2	3	4	3					2				
	D	7	8	10	7	1	1	2	3									
East Java and Madura	C	13	13															
	D	10									5							
Sanggi Islands	C		105	17	25	12					1							
	D		6	3						48								
Sumatra	C	4	1	1	2					5								
	D																	
Egypt:																		
Alexandria	C		5											1				
Port Said	C				2													
Great Britain:																		
England and Wales	C	643	994	1,005	1,455	322	376	439	393	433	361	449	457	423				
Aston under Lyne	C	1	6	3	4	3	8	7	11	5	4	2	4	9				
Bradford	C	13	20	8	5	2								1				
Cardiff	C	1	1									2		1	2			
Leeds	C				6	2	1		8	6	3	4	3	1	1			
London	C	174	321	480	597	138	193	183	185	210	124	195	181	169				
	C	442	783	799	1,101	255	312	292	297	323	243	350	332	308				
London and Great Towns	D		1		2	1		4		1		1	1	2				
Newcastle on Tyne	C		1															
Stoke-on-Trent	C	9	1	12	12	2	10	20	9	18	23	40	41	17				
Greece: Patras	C			1														
Hedjaz	C	7	6	11	11													

[1] 5 cases of smallpox were reported Apr. 14 in Costa Rica outside of city of San Jose.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930			
						15	22	1	8	15	22	29	5	12	19	26
India	C	3,337	7,644	12,789	26,524	9,100	9,061	8,084								
	D	730	1,963	3,730	6,186	1,922	2,068	1,762								
Bombay	C	12	42	119	342	112	155	173	198	233	187					
	D	8	14	57	164	57	74	95	117	123	114					
Calcutta	C	6	54	88	185	96	73	70	160	106	155		100			
	D	4	39	62	130	63	52	56	116	77	138		90			
Cochin	C	96	387	234	234	62	17	31	74	87	71	72	61	56		
	D	11	72	20	27	8	5	8	8	14	11	3	7	3		
Karachi	C	2	7	17	30	5	11		22	14	13	12	8	10		
	D	1	2	11	9	4	4		8	5	3	3	4	10		
Madras	C	58	64	85	105	39	47	25	48	38	53	43	39	55		
	D	11	11	16	16	5	4	12	8	8	9	12	7	6		
Moulmein	C	3	6	18	65	26	37	51	29	39	43	40	25	10		
	D	2	3	9	18	10	7	11	12	15	9	8	9	4		
Negapatam	C	1	1			1										
Rangoon	C		1	2	7	1	1	4	1	5	1	3	1			
	D				4	1	1			2	1	2				
Tuticorin	C				3											
Vizagapatam	C			2	5	5	2		2	4	8	53	4	1		
	D					1				1	1	14	2	1		
India (French):																
Chandernagor	C				3	5		2	4		4	2				
	D					2	2		1			2				
Karikal	C	4	1		3	4		4	4		10	12				
	D	2	1		3	2		4	2		5	2				
Pondicherry Province	C	19	7	20	22	9	17	12	14		9	12			1	
	D	16	7	19	19	9	14	11	5		7	6			1	
India (Portuguese)	C		1		16	10	12	17	11	5	21			5		
	D						2	1	3		1					
Indo-China (see also table below):																
Pnompenh	C	2														
	D				1										1	
Saigon and Cholon	C			4	3	2	1	1			2		1			
	D			2	3	1		1			1					

Iraq:																
Baghdad	C	9	20	16	7	2	1							1	2	
	D	3	10	5	3	1										
Basra	C		5				1									
Diyalah Liwa	C	63	46													
	D	18	7													
Kirkuk Liwa	C	90	70													
	D	26	19													
Mossoul	C	152	48	80	26		8	4						22		
	D	99	17	3	7		1	1						3		
Ivory Coast (see table below).																
Macao	D								2	1	2			1		
Mexico (see also table below):																
Aguascalientes	D	1														
Coahuila	D	1														
Jalisco (State): Guadalajara	D	1	6	9	9	1	3	6	4	3	7	5	7	6	4	8
Juarez	C	6	11	3	2			3								
	D	2	2	2	1			1								
Mexico City and surrounding territory [1]	C	9	19	25	30	16	13	9		26	13					
	D	4	9	4	7	5	2	14		3	9					
Morelos State: [2]																
San Luis Potosi	C							1								
	D							1								
Morocco (see table below).																
Netherlands: Rotterdam	C	18	5	1												
	D	1	1													
Nigeria: Lagos	C			2	5	2										
	D			1	2											
Panama	C	11														
Persia (see table below).																
Philippine Islands: Sarangani and Balut Islands [3]	D			40	18	3										
Poland	C	2	4	2		2										
Portugal:																
Lisbon	C	2	3	6	4	7					4	1	2	2	3	
Oporto	C		1													
Rumania	C				1				1							
Siam	C	7	3	42					2					2	2	
	D	2	1	9	1										2	
Somaliland, British: Boales	C	25	24	5	35		12	7			2					
	D	16	9	9	8		2			2	3	1				
Straits Settlements	C				2							2	3	1	1	
	D				1							1				
Sudan (Anglo-Egyptian)	C	91	254	290	230	19	1	59		8	5	22	25	2	9	31
	D	12	45	65	34	2		4			2		3	1		3
Sudan (French) (see table below).																
Syria (see table below).																
Tunisia: Tunis	C	23	47	20	7			3				2	1			

[1] During the month of March, 1930, 100 cases of smallpox were reported in Mexico City, Mexico, and surrounding territory.
[2] Newspaper reports of Feb. 4 show an epidemic of smallpox in Ionacatepec, Morelos State, Mexico, and vicinity, giving 600 deaths in preceding 2 weeks.
[3] On Feb. 1, 1930, 317 cases of smallpox with 102 deaths were reported to that date in Sarangani and Balut Islands.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[Cindicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15–1929–Jan. 11, 1930	Jan.12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930			
						15	22	1	8	15	22	29	5	12	19	26
Turkey (see table below).																
Union of South Africa:																
Cape Province	C	P	P	P	P	P	P	P	P	P						
Natal	C		P													
Orange Free State	C	P	P	P	P	P	P	P	P	P						
Transvaal	C	P	P	P	P	P	P	P	P	P						
Upper Volta	C					17			9	1	1	2				
Zanzibar	C									9	2		2			
On vessel:																
S. S. Tairoa, at Liverpool, from London	C							1								
S. S. Karagola, at Zanzibar, from India	C				4											
S. S. Karoa, at Zanzibar	C	1														
S. S. Taipiku, at Manila, from Australia	C	1														
S. S. Karagola, at Lorenzo Marques, from India	C						1									

Place		October, 1929	November, 1929	December, 1929			January, 1930			February, 1930			March, 1930			Apr. 1–10, 1930
				1–10	11–20	21–31	1–10	11–20	21–31	1–10	11–20	21–28	1–10	11–20	21–31	
Belgian Congo	C		42	41	33											
	D		2	4												
Dahomey	C	4	19	19												
Indo-China (see also table above)	C	128	245		142		136	140	184	148	286			7	26	261
Ivory Coast	C															
Sudan (French)	C		P		17			4	225	12	P	201		258	409	371
	D								25	1		10		18	31	30
Syria: Beirut	C	28	60	10	9	6	18	6	46	4	7	7	4	8	5	10
	D	1	6													
Taiwan: Taihoku	C										31	12	31			

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Bolivia: La Paz	C	120	22	----	----	----	----
British East Africa (see also table above):							
Kenya	C	----	278	168	12	12	6
Chosen	C	----	2	----	1	4	----
Mexico: Durango (see also table above)	D	2	2	4	12	6	5
Morocco	C	12	41	84	29	74	----
Nigeria	C	233	228	293	----	----	----
	D	47	45	70	----	----	----
Persia	C	57	----	P	----	----	----
	D	158	37	----	----	----	----
Turkey	C	100	136	883	215	114	----
	D	29	12	457	66	42	----

TYPHUS FEVER

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Algeria:																			
Algiers	C	2	1	14	----	----	2	1	3	----	1	----	2	1	----	3	2	----	----
Constantine Department	C	1	3	2	1	2	----	1	3	2	----	----	2	3	----	----	4	----	----
Oran	C	----	1	----	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----
Bolivia: La Paz	C	13	14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Brazil: Sao Paulo.[1]																			
Bulgaria	C	----	9	41	----	----	----	----	----	----	----	13	9	----	----	----	----	----	----
	D	----	1	2	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----
Sofia	C	1	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----
	D	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Chile:																			
Talcahuano	D	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----
Valparaiso	C	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----
China: Tientsin	C	----	----	1	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----

Chosen (see table below),
Czechoslovakia (see table below).

[1] Press reports show that 10 deaths from typhus fever occurred in Sao Paulo, Brazil, from Nov. 3 to 30, 1929.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Egypt:																			
Assuan	C			9															
	D			1															
Beheira Province	C	2		7	6	8			5	13									
	D	1								5									
Cairo	C		1							5									
	D		1																
Dakahlieh	C			11															
	D			2															
Port Said	C					1		1			1								
Suez	C	1																	
Greece (see table below).																			
Iraq: Baghdad Liwa	C			1												2			
	D			1															
Ireland:																			
Irish Free State	C			1															
Dingle—Kerry County	C																		3
Northern Ireland—Cookstown	C											3							
Latvia (see table below).																			
Lithuania (see table below).																			
Mexico: Mexico City, including municipalities in Federal district	C	3	5	6	3	3	2	4	4	2	3			2					
	D	1		2	2	1	1												
Morocco	C	4	2	6	7	2	7	7		2	8	11	4	7	14	13	6	5	
	D														4	3	2	1	
Palestine	C	2	1	1						1			1	1	2	2		1	
Peru: Arequipa (see table below).																			
Poland	C	62	74	61	67	96	52	81		72	55	56	69	54	43	61			
	D		10	4	5	7	8	1		3	2	3	5	2	2	4			
Portugal: Oporto	C	3	3								1			2			1		
Rumania	C	19	103	82	41	48	96	56	88	58	54	93	90						
	D	2	10	5	8	2	7	8	11	2	5	5	7						
Tunisia	C	1	3	2						3									

Turkey (see table below).																							
Union of South Africa:																							
Cape Province	C	P	P	P	P	P		P	P	P	P	P	P	P	P	P							
Natal	C	P	P	P	P	P	1	P	P	P	P	P	P	3	P	P							
Orange Free State	C	P												P									
Transvaal	C	P																					
Yugoslavia (see table below).																							

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Chosen: Seoul	C			1		17	
Czechoslovakia	C		3		10		
France	C			1			
Greece: Athens	C	7		6	12	6	3
Latvia	C			2	18		
Lithuania	C	6	4	5	2	70	62
	D	1	1	1		5	4
Peru: Arequipa	D	1					
Turkey	C	10	2	4	2	3	1
Yugoslavia	C	1		6	26	33	46
	D			1	3	5	2

YELLOW FEVER

On April 22, 1930, 2 cases of yellow fever were reported at Mage, Brazil. Mage is on the Leopoldina Railway, between Rio de Janeiro and Nichtheroy.